October 1976 Number 386-Part II

Solar-Geophysical Data comprehensive reports

Data for April 1976–March 1976 & Miscellanea

Explanation of Data Reports Issued as Number 378 (Supplement) February 1976

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NO. 386 OCTOBER 1976

Part II (Comprehensive Reports)

DATA FOR
APRIL 1976
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& MISCELLANEA

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

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No. 386

Issued in two parts

Hope I. Leighton, Editor

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Solar - Terrestrial Data Services Division

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Note: A = Part I, B = Part II.

374A 28 listed under 1975 Aug shows that data for August 1975 were contained in *Solar-Geophysical Data* Number 374 - Part I beginning on page 28.

APRIL 1976 DATA

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SYNOPTIC MAP OF THE SOLAR CHROMOSPHERE WITH TABLE OF LOCATIONS OF ACTIVE REGIONS

These documents are a preliminary version of the maps of filaments and active regions published biennially by the Paris Observatory. They are prepared from the daily spectroheliograms of the Meudon Observatory (Hα, K_{1v} and K_3) and from filtergrams of the Haute Provence Observatory (Hα). When there are gaps in these observations, they are filled by the complementary Hα and K_{2-3} images from the Kodaikanal (India), Athens (Greece) and Madrid (Spain) Observatories.

I. Map.

On the map solar meridians and parallels appear as a rectangular grid so that a phenomenon appearing at latitude ϕ has its longitudinal size enlarged proportional to sec ϕ. Choice of the 0° meridian and numbering follows Carrington. A rotation begins at the moment when the 0° meridian coincides with the central meridian.

The longitude of the central meridian of the visible hemisphere at 0h is shown for every day of the rotation by short heavy bars. Some dates are shown for convenience. The longer bars show the longitude of the central meridian at the time of the observations used.

The map presents a synopsis of chromospheric filaments and of active regions with or without sunspots. The schematic line which locates the filaments is obtained by superposition of daily observations. The solid areas inside the double lines correspond to the part of the filament which was observed on more than eight days whether successive days or not. The hatched parts were observed between 4 and 8 days and the parts left blank correspond to a visibility of less than four days. Small size filaments visible only by a single observation are not shown.

Sunspots are shown by small circles with diameters proportional to their size. The adopted diameter corresponds approximately to a maximum diameter observed while the sunspot crosses the visible hemisphere of the sun, measured on the Meudon plates K_{1v} and reduced to the scale of the maps. Facular plages are shown at the moment of the maximum development of the sunspots that they contain, or on the day when the brightness was maximum. This brightness is indicated by four kinds of hatching, the darkest corresponds to the most intense plages, the clearest to highly scattered faculae.

II. Table of Active Regions

The columns of the table are explained as follows:

1) Identification numbers by rotation. This identification has been used in *IAU Quarterly Bulletin* since 1959 with the lists of published flares to indicate the responsible active regions.

2) Mean co-ordinates for each active region.

3) Age, given in days in relation to central meridian passage. Example: A center is >6 days old when it was born before appearing at East limb. The number of days is preceded by + if it was born before passage at central meridian, by - if it was born between the central meridian and the West limb.

4) Importance on a scale of 1 to 10. The value given takes into account the persistence, the number and the size of sunspots and the size of the facular plage. Ephemeral plages or the very scattered ones are outlined on the maps but are not mentioned in the table.

5) Indication (x) that no visible sunspots on K_{1v} Spectroheliograms have been observed in this center during the passage.

6) Identification of the center in the preceding rotation if the active region is a return one.

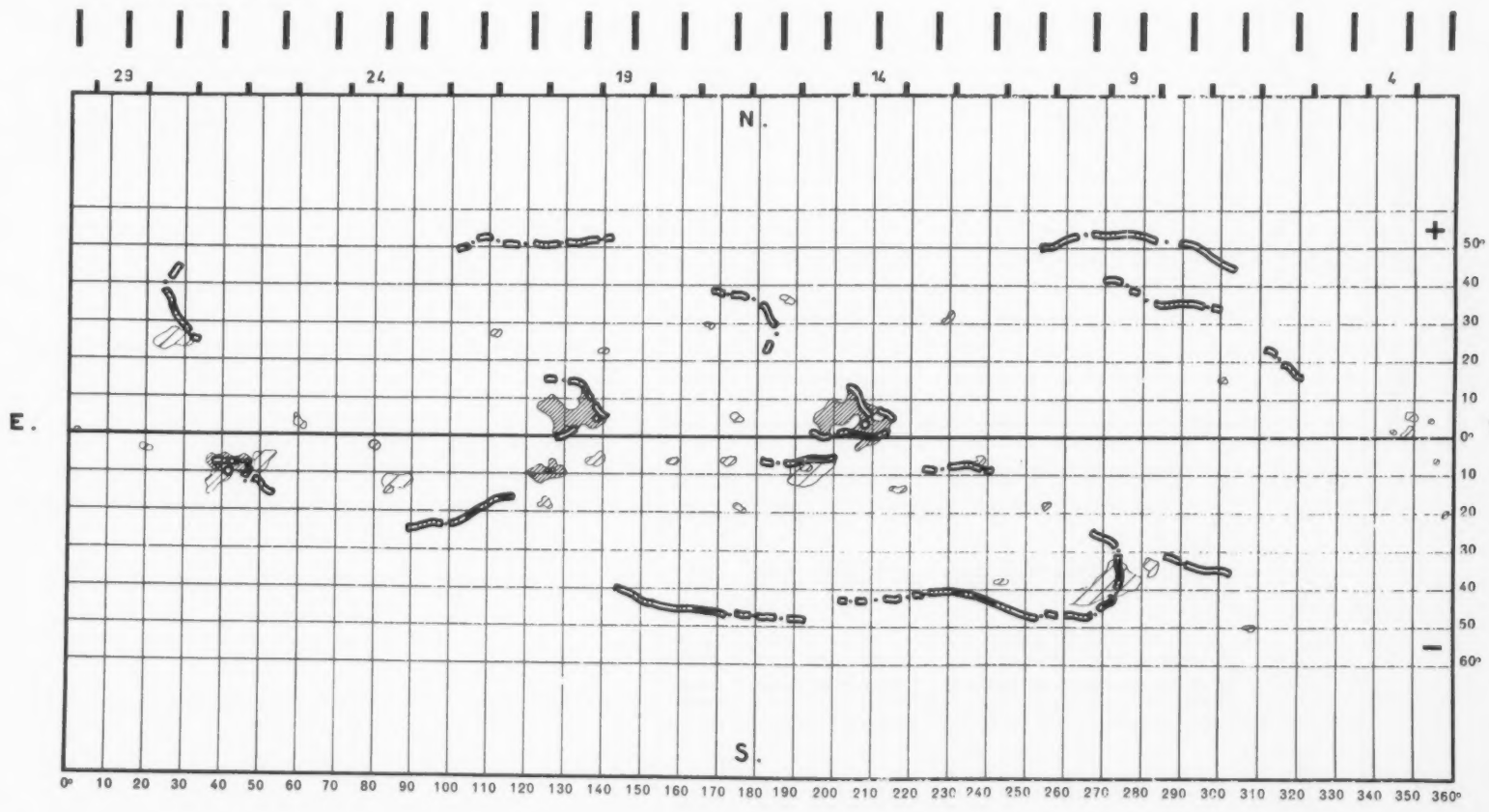
7) State of activity in the center during the passage at the West limb.

SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1640

(APRIL 3-30, 1976)

MEUDON OBSERVATORY



5 Apr 76

ACTIVE REGIONS

CARRINGTON ROTATION 1640

(April 3 - 30, 1976)

Region No.	Coordinates Lat.	Long.	Age at CMP	Imp.	Spot-less Region	Region No. in Rotation 1639	Activity at West Limb
1	34°S	282°	>6	1	x	(5)	dispersed
2	38 S	244	0	1	x		disappeared
3	32 N	230	+4	1	x		disappeared
4	14 S	217	+4	1	x		dispersed
5	6 N	205	>6	3		(7)	decreasing
6	8 S	193	-3	1	x		stable
7	7 S	173	-4	1	x		decreasing
8	6 S	158	+3	1	x		disappeared
9	6 S	138	-4	1	x		?
10	6 N	132	>6	3			decreasing
11	9 S	126	+4	2			decreasing, no spot at limb
12	17 S	125	+5	1	x		disappeared
13	28 N	112	+4	1	x		disappeared
14	3 S	80	-5	1	x		?
15	3 N	60	-2	1	x		disappeared
16	7 S	50	>6	1	x	(12)	decreasing
17	8 S	42	0	3			slightly decreasing
18	11 S	39	>6	3		(12)	decreasing
19	26 N	27	>6	1	x		disappeared

Hα SOLAR FLARES

APRIL 1976

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE 1976 APR	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY	MIN.		CONF	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
GRP63347	01	1041+1	1042+4 1058	1106	S11	W19	.330	14143	31.0	25	-N				40	.4	E
MONT	01	1041	1042	1108	S11	W19	.330	14143	31.0	27	-N		C	1042	80		E
MEUD	01	1042	1043	1050	S10	W18	.311	14143	31.1	8	-F		C	1043	40	.4	E
ATHN	01	1042E	1046	1052	S12	W19	.334	14143	31.0	10D	-N	2		1046	33	66.0	
KHAR	01	1045E	1045	1110	S12	W19	.334	14143	31.0	25D	-N		C	1045			D
ATHN	01	1056	1058	1103	S12	W19	.334	14143	31.0	7	-F	2		1058	33	66.0	
348 MONT	01	1442	1448	1508	S07	W19	.323	14143	31.2	26	-F		C	1448	40		E
	01	1750	1756	NO FLARE PATROL													
	01	2021	2149	NO FLARE PATROL													
	01	2221	2230	NO FLARE PATROL													
	02	0132	0157	NO FLARE PATROL													
	02	0205	0208	NO FLARE PATROL													
GRP63349	02	0455	0458+4	0511	S07	W33	.541	14143	30.7	16	-F						E
CULG	02	0455	0458	0510	S07	W33	.541	14143	30.7	15	-F		C	0458	40	.5	
ABST	02	0500E	0502	0512	S07	W34	.556	14143	30.7	12D	-F		P	0502	105	1.3	E
350 ABST	02	0722E	0722	0754	S05	W30	.498	14143	31.1	32D	-F		P	0722	87	1.0	DJ
GRP63351	02	0755+0	0756	0758	S05	W31	.513	14143	31.0	3	-F				80	.9	DV
BUCA	02	0755		0758	S06	W33	.542	14143	30.9	3	-N		C	0756	85	1.0	D
ABST	02	0755	0756	0757	S04	W30	.500	14143	31.1	2	-F		C	0756	79	.9	DV
GRP63352	02	0857+3	0858+2	0904	S09	W28	.467	14143	31.3	7	-F				60	.7	D
KHAR	02	0857E		0903D	S08	W28	.467	14143	31.3	6D	-F		C	0859	70	.8	D
MONT	02	0858	0858	0903	S09	W27	.452	14143	31.3	5	-F		C	0858	20		
CATA	02	0900	0900	0905	S10	W28	.468	14143	31.3	5	-N	1		0900	56	.6	
GRP63353	02	1205+5	1211+4	1243	S06	W36	.585	14143	30.8	38	-N				130	1.6	
MONT	02	1205	1211	1243	S06	W36	.585	14143	30.8	38	-N		C	1211	110		
ZURI	02	1205	1211	1243	S05	W36	.586	14143	30.8	38	-N		C	1211	160	1.9	
KHAR	02	1208E	1212	1240D	S07	W37	.598	14143	30.7	32D	1F		C	1212	250	2.7	
CATA	02	1210	1215	1245	S08	W37	.598	14143	30.7	35	-N	1		1215	84	1.0	T
354 CATA	02	1555	1600	1625	S13	W37	.602	14143	30.9	30	-B	2		1600	67	.9	D
	02	1702	1746	NO FLARE PATROL													
	02	1813	1946	NO FLARE PATROL													
	02	2006	2109	NO FLARE PATROL													
355 UPIC	03	0810E		0815	S07	W47	.727	14143	30.8	5D	-F		P	0810	61	44.0	
356 UPIC	03	0840E		0900	S07	W47	.727	14143	30.8	20D	-F		P	0840	82	59.0	
357 MONT	03	1015	1021	1034	S05	W44	.692	14143	31.1	19	-F		C	1021	20		D
358 PALE	03	2052	2054	2103	S07	W51	.773	14143	31.0	11	-F	3	C		12		DE
GRP63359	05	1622+3	1626+1	1630	S11	W77	.971	14143	30.9	8	-F				50		DHL
RAMY	05	1622	1626	1630	S12	W76	.966	14143	31.0	8	-F	4	C		81		DE
MEUD	05	1623	1626	1630D	S08	W78	.976	14143	30.8	7D	-N		C	1626	60		
MCMA	05	1625	1627	1630	S12	W78	.974	14143	30.8	5	-F		C	1627	25	1.2	DHL
RAMY	05	1628E	1628U	1630D	S12	W75	.962	14143	31.1	2D	-F	4	V		45		DE
	05	2045	2351	NO FLARE PATROL													
	05	2352	0115	NO FLARE PATROL													
	06	0210	0215	NO FLARE PATROL													
360 ATHN	06	1351	1353	1358	S05	E81	.986	14160	12.7	7	-F	4	C		19		DE
	06	2107	2116	NO FLARE PATROL													
	06	2119	2240	NO FLARE PATROL													
	07	0226	0338	NO FLARE PATROL													
	07	0344	0428	NO FLARE PATROL													
	07	0446	0527	NO FLARE PATROL													
	07	0852	0900	NO FLARE PATROL													
	07	2016	2028	NO FLARE PATROL													
	07	2043	2140	NO FLARE PATROL													
	08	0207	0216	NO FLARE PATROL													
	08	0252	0305	NO FLARE PATROL													
	08	0306	0329	NO FLARE PATROL													
	08	1900	1920	NO FLARE PATROL													
	08	1945	1956	NO FLARE PATROL													

Note: Although these flare listings give all reported events, not all possible brightenings are reported. Thresholds of reporting vary from observatory to observatory.

Hα SOLAR FLARES

APRIL 1976

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
					APPROX		CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY								
	DATE 1976 APR	START	MAX. PHASE	END	LAT.	MER. DIST.				MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
361 VORO	09	0019	0021	0050	N06	E80	.987	14161	15.0	31	1F		C	0021	134	5.5	EJ
	09	0230	0230	NO FLARE PATROL													
	10	1026	1808	NO FLARE PATROL													
	10	1822	1841	NO FLARE PATROL													
	10	1846	1948	NO FLARE PATROL													
	10	2000	0025	NO FLARE PATROL													
	11	1730	1737	NO FLARE PATROL													
362 MCMA	11	1754		1809	N06	E39	.652	14161	14.7	15	-N		C	1759	45	.6	E
	11	1930	1955	NO FLARE PATROL													
	11	2013	2059	NO FLARE PATROL													
	12	2200	2240	NO FLARE PATROL													
	14	0413	0415	NO FLARE PATROL													
GRP63363	14	0543+1	0552+1	0559	N04	E01	.169	14161	14.3	10	-F				25	.3	
CULG	14	0549	0552	0558	N05	E02	.189	14161	14.4	9	-F		C	0552	20	.2	
ATHN	14	0550	0553	0559	N04	E01	.169	14161	14.3	9	-F	2		0553	33	66.0	
364 HTPR	14	0643	0648	0652	N06	W01	.204	14161	14.2	4	-F		C	0648	10	.1	
GRP63365	14	1145	1149+1	1158	N05	W03	.193	14161	14.3	13	-F				20	.2	
HTPR	14	1145	1149	1154	N06	W04	.214	14161	14.2	9	-F		C	1149	20	.2	E
MONT	14	1147E	1150	1201	N05	W02	.189	14161	14.3	14D	-F		C	1150	20		D
GRP63366	14	1203	1211+6	1233	S13	W07	.174	14163	14.0	30	-F				20	.2	H
HTPR	14	1203	1211	1231	S13	W09	.199	14163	13.8	28	-F		C	1211	10	.1	
RAMY	14	1207E	1217	1235	S13	W05	.153	14163	14.1	28D	-F	3	C		27		H
GRP63367	14	1410	1417+1	1510D	N04	W01	.169	14161	14.5	60	-N						EKW
MCMA	14	1410	1418	1441D	N04	W01	.169	14161	14.5	31D	-B		C	1418	50	.5	EKW
ATHN	14	1415E	1417	1420D	N03	W03	.160	14161	14.4	5D	-F	2		1417	98	196.0	
MONT	14	1426E	1426	1510D	N04	W01	.169	14161	14.5	44D	-N		C	1426	150		B
CATA	14	1430E	1430	1435D	N04	W01	.169	14161	14.5	5D	-N	2		1430	112	1.2	
	14	1441	1443	NO FLARE PATROL													
	14	1510	1604	NO FLARE PATROL													
	14	2217	2231	NO FLARE PATROL													
	14	2232	2245	NO FLARE PATROL													
	15	1536	1624	NO FLARE PATROL													
	15	1937	2015	NO FLARE PATROL													
	15	2017	2026	NO FLARE PATROL													
	15	2029	2143	NO FLARE PATROL													
	16	0656	0702	NO FLARE PATROL													
368 MONT	16	1012	1013	1015	N03	E49	.762	14168	20.1	3	-F		C	1013	20		D
369 CATA	16	1205	1210	1215D	N07	W25	.468	14161	14.6	10D	-N	1		1210	112	1.3	
	16	1216	1225	NO FLARE PATROL													
	16	1837	1855	NO FLARE PATROL													
	16	2139	2143	NO FLARE PATROL													
370 CULG	16	2326	2328	2353	N07	W32	.564	14161	14.6	27	-F		C	2329	30	.3	
	17	1010	1030	NO FLARE PATROL													
371 CATA	17	1220	1220	1245D	S09	E50	.763	14171	21.3	25D	-N	2		1220	56	.9	
	17	1504	1505	NO FLARE PATROL													
	17	1754	1803	NO FLARE PATROL													
372 ATHN	18	1226E	1226U	1228	N02	W53	.803	14161	14.5	2D	-F	3	C		32		DE
	19	0415	0433	NO FLARE PATROL													
	19	0504	0515	NO FLARE PATROL													
	19	0518	0523	NO FLARE PATROL													
	19	0532	0540	NO FLARE PATROL													
GRP63373	19	1100+1	1100 1107+8	1113	N02	W65	.909	14161	14.6	13	-F				30	.7	
MEUD	19	1100	1100	1108	N02	W64	.901	14161	14.7	8	-F		C	1100	30	.7	
RAMY	19	1101	1107	1113	N01	W65	.908	14161	14.6	12	-F	4	C		27		DE
RAMY	19	1105E	1107	1113	N02	W65	.909	14161	14.6	8D	-F	4	V		27		DE
	19	1929	2011	NO FLARE PATROL													

Hα SOLAR FLARES

APRIL 1976

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE 1976 APR	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONC	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
374 CULG	20	0214	0218	0245	N01	W77	.975	14161	14.3	31	-F		C	0218	20	.8	
375 HTPR	20	0653	0655	0656	N06	W06	.220	14168	19.8	3	-F		C	0655	10	.1	
376 HTPR	20	0757	0759	0803	N08	W07	.258	14168	19.8	6	-F		C	0759	10	.1	
377 RAMY	20	1233	1257U	1313	N04	W09	.223	14168	19.8	40	-F	4	C		27		DE H
GRP63378	20	1740	1836+0	1846	N03	W77	.980	14161	15.0	66	1F				90		
RAMY	20	1740E	1836U	1846	N04	W78	.980	14161	14.9	66D	-F	3	C		63		DE F
RAMY	20	1834E	1836U	1846D	N03	W77	.976	14161	15.0	12D	-F	3	V		64		
RAMY	20	1834E	1836U	1846D	N03	W77	.976	14161	15.0	12D	-F	3	C		64		
	20	1846	1847	NO FLARE PATROL													
	21	1328	1431	NO FLARE PATROL													
	21	1455	1504	NO FLARE PATROL													
63379	21	1522	1526+4	1540	N04	W23	.413	14161	13.9	18	-N				50	.5	FH
RAMY	21	1522	1526	1540	N04	W24	.433	14168	19.8	18	-N	4	C		45		F
RAMY	21	1526E	1530	1537D	N04	W23	.413	14168	19.9	11D	-N	4	V		48		F H
	21	1813	2004	NO FLARE PATROL													
	21	2100	2111	NO FLARE PATROL													
	21	2215	2225	NO FLARE PATROL													
380 HTPR	22	0703	0704	0709	S10	W17	.302	14171	21.0	6	-F		C	0704	10	.1	
GRP63381	22	1537	1604+0	1630	S11	W21	.368	14171	21.2	53	-N				60		FU
RAMY	22	1537	1604	1629	S10	W20	.349	14171	21.2	52	-N	4	C		63		U F
RAMY	22	1540E	1604	1630D	S10	W20	.349	14171	21.2	50D	-N	4	V		60		U F
MCMA	22	1559E	1604	1625D	S12	W22	.388	14171	21.0	26D	-N		C	1600	60	.7	E
382 CULG	22	2154	2157	2200	S09	E58	.845	14179	27.3	6	-F		C	2157	30	.6	
383 CULG	22	2306	2308	2313	S09	E57	.835	14179	27.2	7	-F		C	2308	30	.6	
	23	0054	0102	NO FLARE PATROL													
	23	1144	1148	NO FLARE PATROL													
	23	2018	2049	NO FLARE PATROL													
	23	2159	2206	NO FLARE PATROL													
	24	0717	0724	NO FLARE PATROL													
	24	0833	0843	NO FLARE PATROL													
	24	1342	1553	NO FLARE PATROL													
	24	1604	1612	NO FLARE PATROL													
	24	1625	1705	NO FLARE PATROL													
GRP63384	25	0207+1	0215+1	0233	S11	E29	.505	14179	27.3	26	-F				35	.4	F
CULG	25	0207	0216	0219D	S12	E29	.493	14179	27.3	12D	-N		F	0216	50	.5	
PALE	25	0208	0215	0233	S10	E30	.503	14179	27.3	25	-F	3	C		21		F
	25	0639	0705	NO FLARE PATROL													
	25	0821	0823	NO FLARE PATROL													
	25	1010	1012	NO FLARE PATROL													
	25	1017	1026	NO FLARE PATROL													
	25	1048	1100	NO FLARE PATROL													
	25	1138	1152	NO FLARE PATROL													
	25	1219	1224	NO FLARE PATROL													
	25	1500	1519	NO FLARE PATROL													
	25	1626	1630	NO FLARE PATROL													
385 PALE	25	2158	2203	2219	N03	E63	.894	14185	30.6	21	-N	3	C		57		DE
	26	0940	0955	NO FLARE PATROL													
	26	1530	1540	NO FLARE PATROL													
	26	1637	1644	NO FLARE PATROL													
	26	1904	1927	NO FLARE PATROL													
	26	2000	2007	NO FLARE PATROL													
	26	2010	2016	NO FLARE PATROL													
	26	2027	2040	NO FLARE PATROL													
	26	2136	2149	NO FLARE PATROL													
	26	2205	2214	NO FLARE PATROL													
	26	2235	2242	NO FLARE PATROL													
	26	2304	2322	NO FLARE PATROL													
	26	2348	0011	NO FLARE PATROL													
	27	0103	0116	NO FLARE PATROL													

Hα SOLAR FLARES

APRIL 1976

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE 1976 APR	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONC	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
	27	2000	2038	NO FLARE PATROL													
	27	2058	2129	NO FLARE PATROL													
	27	2135	2159	NO FLARE PATROL													
386 HTPR	27	1029	1035	1041	S13	E01	.147	14179	27.5	12	-F		C	1035	10	.1	
	28	1852	1944	NO FLARE PATROL													
GRP63387	28	1410+5	1418+3	1431	N02	E30	.510	14185	30.8	21	-F				30	.3	DHL
MCMA	28	1410	1419	1440	N01	E29	.492	14185	30.8	30	-F		C	1419	25	.3	DLS
ATHN	28	1415E	1418	1426	N03	E30	.513	14185	30.8	11D	-F	5	C		19		DE
RAMY	28	1415	1421	1431	N03	E29	.499	14185	30.8	16	-F	4	C		27		DE H
RAMY	28	1420E	1421U	1431	N03	E31	.528	14185	30.9	11D	-F	4	V		27		DE
GRP63388	28	1954	2008 2015	2023	S09	W20	.348	14185	27.3	29	-F				50	.5	F
RAMY	28	1954	2008	2025	S08	W20	.345	14179	27.3	31	-F	4	C		45		F
MCMA	28	1958E		2000D	S10	W20	.352	14179	27.3	2D	-F		P	1958	40	.5	E
RAMY	28	2014E	2015U	2021	S08	W21	.361	14179	27.3	7D	-F	3	V		45		F
	28	2105	2115	NO FLARE PATROL													
GRP63389	29	0103+2	0106+3	0135	N03	E22	.394	14179	30.7	32	-N						E
VORO	29	0103	0106	0114D	N04	E22	.399	14185	30.7	11D	1N		P	0106	224	2.5	E
CULG	29	0105	0109	0135	N02	E22	.389	14185	30.7	30	-F		C	0109	30	.3	
GRP63390	29	0740E		0849	S09	W28	.472	14185	27.2	69	-F						
HTPR	29	0740E		0850	S09	W28	.472	14179	27.2	70D	-F		C	0834	80	.9	E
MONT	29	0813E	0813	0847	S09	W28	.472	14179	27.2	34D	-F		C	0813	20		D
GRP63391	29	0835+4	0836+3	0843	N02	E17	.311	14179	30.6	8	-F				45	.5	
MONT	29	0835	0838	0843	N03	E17	.318	14185	30.6	8	-F		C	0838	60		E
ATHN	29	0839	0841	0843	N02	E17	.311	14185	30.6	4	-F	5	C		32		F
GRP63392	29	1124+1	1125+1	1158	S08	W28	.470	14185	27.4	34	-N				140	1.6	E
MONT	29	1124	1125	1157	S08	W29	.486	14179	27.3	33	-N		C	1125	180		
MCMA	29	1125	1126	1158	S09	W28	.472	14179	27.4	33	-B		C	1126	100	1.2	E
GRP63393	29	1318+8	1328+4	1342	N04	E16	.310	14179	30.8	24	-N				50	.5	E
MCMA	29	1318	1328	1345	N03	E15	.288	14185	30.7	27	-N		C	1328	50	.5	E
RAMY	29	1325	1332	1338	N04	E16	.310	14185	30.8	13	-F	4	C		36		DE
ZURI	29	1326	1327	1327D	N04	E16	.310	14185	30.8	1D	-B		P	1327	120	1.3	
GRP63394	29	1904	1920+3	1940	S08	W31	.515	14185	27.5	36	-N				80	.9	F
MCMA	29	1904	1923	2005	S09	W31	.517	14179	27.5	61	-B		C	1923	60	.7	E
RAMY	29	1919E	1920U	1940D	S08	W31	.515	14179	27.5	21D	-N	3	C		99		F
RAMY	29	1920E	1920U	1934	S08	W31	.515	14179	27.5	14D	-N	2	V		75		F
GRP63395	29	2106	2118	2126	S08	W32	.530	14179	27.5	20	-B				80	.9	E
MCMA	29	2106	2118	2126	S09	W33	.546	14179	27.4	20	-B		C	2118	70	.9	E
VORO	29	2107E		2125	S08	W31	.515	14179	27.6	18D	-B		C	2112	90	1.1	E
GRP63396	29	2241+0	2242 2304+7	2319	S08	W33	.545	14179	27.5	38	-N						E
CULG	29	2241	2311	2320	S08	W33	.545	14179	27.5	39	-F		C	2311	30	.4	
VORO	29	2241	2242	2259	S08	W34	.559	14179	27.4	18	1N		C	2242	233	2.8	E
VORO	29	2303	2304	2318	S08	W34	.559	14179	27.4	15	1N		C	2304	296	3.6	E
397 ABST	30	0530E	0534	0544	S08	W39	.628	14179	27.3	14D	-F		P	0534	87	1.1	EK
GRP63398	30	0557	0558	0628	S08	W38	.628	14179	27.4	31	-F						
CULG	30	0557	0558	0628	S08	W37	.601	14179	27.5	31	-F		C	0558	40	.5	
MANI	30	0605E	0607U	0607D	S08	W40	.642	14179	27.3	2D	-N	3	P	0607	60	.8	

Hα SOLAR FLARES

APRIL 1976

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE APR 1976	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONG.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
GRP63399	30	0822+3	0823 0844+6	0900	S06	W39	.628	14179	27.4	38	-N				70	.9	E
ATHN	30	0822	0823	0828	S09	W39	.629	14179	27.4	6	-F	5	C		19		DE
ARCE	30	0825		09000	S07	W40	.641	14179	27.4	35D	-F		C	0845	65	.9	
MONT	30	0843	0844	0859	S05	W39	.628	14179	27.4	16	-N		C	0844	80		E
ZURI	30	0844	0844	0900	S06	W40	.641	14179	27.4	16	1B		C	0844	180	2.4	
ATHN	30	0844	0845	0848	S07	W36	.587	14179	27.7	4	-N	4	C		32		F
CATA	30	0850	0850	0915	S06	W40	.641	14179	27.4	25	-N	2		0850	56	.8	
400 MONT	30	1008	1010	1020	S08	W39	.628	14179	27.5	12	-F		C	1010	40		E
401 ZURI	30	1114	1116	1124	S08	W39	.628	14179	27.5	10	-N		C	1116	80	1.1	
GRP63402	30	1242+2	1245+5	1306	S06	W41	.654	14179	27.5	24	-N				110	15.0	
RAMY	30	1242	1250	1302	S06	W41	.654	14179	27.5	20	-N	4	C		117		FDE
ATHN	30	1243	1247	1301	S05	W41	.654	14179	27.5	18	-N	4	C		95		F
MCMA	30	1243	1245	1310	S07	W41	.654	14179	27.5	27	1B		C	1245	160	2.2	E
RAMY	30	1243	1248	1256	S06	W42	.667	14179	27.4	13	-N	4	V		90		FDE
ZURI	30	1244	1246	1312	S06	W40	.641	14179	27.5	28	1N		C	1246	260	3.4	
CATA	30	1250	1255	1315	S05	W41	.654	14179	27.5	25	-B	2		1255	112	1.5	
GRP63403	30	1450+1	1454+4	1507	S08	W41	.655	14179	27.5	17	-N				60	.8	E
ZURI	30	1450	1454	1504	S07	W43	.680	14179	27.4	14	-N		C	1454	60	.9	
MCMA	30	1451	1458	1510	S09	W40	.643	14179	27.6	19	-N		C	1458	70	1.0	E
404 ATHN	30	1608	1611	1619	S08	W44	.693	14179	27.4	11	-F	2	C		64		F
	30	1737	1747	NO FLARE PATROL													
	30	1749	1758	NO FLARE PATROL													
405 PALE	30	1839	1841	1845	S08	W46	.718	14179	27.3	6	-F	3	C		97		
	30	1943	1954	NO FLARE PATROL													
GRP63406	30	2047+1	2059+9 2122	2218	S08	W46	.718	14179		31	1B						FUZ
RAMY	30	2049E	2059	2120D	S08	W45	.706	14179		31	-B		C		156		UF
PALE	30	2048	2108D	2108D	S09	W47	.730	14179		20	2B		V		684		ZU
PALE	30	2048	2108	2215	S09	W47	.730	14179		87	2B		C		684		ZU
RAMY	30	2049E	2059	2220D	S08	W45	.706	14179		91	-B		V		156		UF
CULG	30	2124E	2124U	2210	S08	W44	.693	14179		46	1N		P		140		
MANI	30	2205E	2205U	2253D	S09	W49	.753	14179		48	-N		V	2205	110	1.7	ZU

"Remarks":

A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by a high speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the calcium II lines H and K.
P = Flare shows helium D_3 in emission.
Q = Flare shows the Balmer continuum in emission.
R = Marked asymmetry in Hα line suggests ejection of high velocity material.
S = Brightness follows disappearance of filament (same position).
T = Region active all day.
U = Two bright branches, parallel (||) or converging (Y).
V = Occurrence of an explosive phase: important and abrupt expansion in about a minute with or without important intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide Hα line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

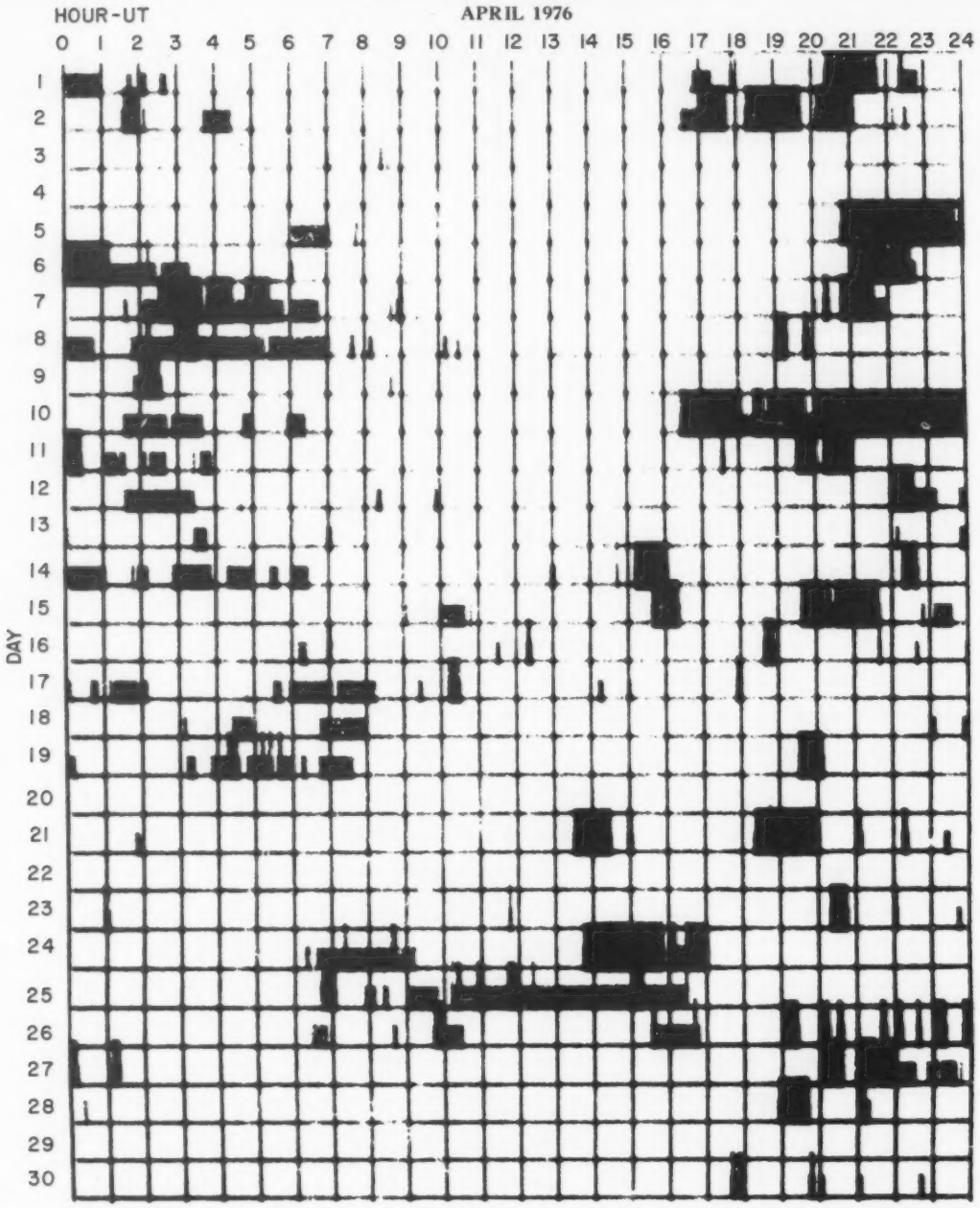
DAILY FLARE INDICES
Includes all Flares

Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.
760401	6.40	22.3	760412	0.00	23.3	760423	0.00	23.2
760402	25.88	20.2	760414	11.88	22.6	760424	0.00	20.7
760403	7.60	24.0	760415	0.00	21.2	760425	1.50	22.5
760405	1.60	19.5	760416	8.70	23.4	760426	0.00	21.5
760406	.89	22.4	760417	1.90	23.5	760427	5.50	22.2
760407	0.00	20.1	760418	1.90	24.0	760428	1.82	23.0
760408	0.00	22.7	760419	.49	22.7	760429	31.52	24.0
760409	3.38	23.5	760420	20.95	24.0	760430	45.28	23.5
760410	0.00	16.5	760421	1.45	20.7			
760411	1.96	22.7	760422	10.98	24.0			

When no Flare Index is given, it is 0 for that day.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE



Observatories included in total patrol:

Abastumani	Culgoora	Kharkov	Manila	Palehua	Upice
Arcetri	Haute Provence	Kiev	McMath-Hulbert	Ramey	Voroshilov
Athenes	Herstmonceux	Kodaikanal	Meudon	Tachkent	Wendelstein
Bucharest	Huancayo	Locarno	Mitaka	Tehran	Zürich
Catania	Hurbanovo	Lvov	Monte Mario		

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
APRIL 1976

APR 1976	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
1	207	VORO	44 NS	0000	0012	120	39			
	100	GORK	44 NS	0406 E		534 D		5		
	200	GORK	44 NS	0406 E		534 D		85		
	221	ABST	44 NS	0500	0551	207	19			
	260	ONDR	44 NS	0530 E		579 D	78	8		
	240	KIEL	44 NS	0543 E	0955	663	1940	90		
	127	TORN	44 NS	0730 E		430 D				
	259	OWIN	44 NS	0955 E		305 D		10		
	245	SGMR	44 NS	1029 E	2040.1	756 D	66.1			
	207	VORO	44 NS	2200	2349	240	40			
	1000	TYKW	42 SER	0456	0456.2	3	1.4	0.2		OR
	2000	TYKW	42 SER	0456	0456.1	3	1.3	0.3		OR
	9650	IRKV	1 S	0519	0521.3	4.5	6	5		70R
	9650	IRKV	1 S	0535.6	0536	1	3			75R
	100	GORK	41 F	0607	0608	5.5	90			
	100	GORK		0607	0609.8		90 D			
	100	GORK		0607	0611.6		90			
	606	MANI	1 S	0607.5	0607.6	.9	4.6	2		
	100	GORK	7 C	0627.2	0629.4	3.5	90			
	100	GORK		0630.7	0650.8	47.3	90			
	550	KIEV	2 S/F	0712.7	0713.2	2	3			
	550	KIEV	41 F	0726.7	0727.5	2	7			
	550	KIEV	6 S	0733.5	0734	1.5	25			
	113	POTS	45	1035	1042	125	80	13		
	100	GORK	41 F	1039.5	1042	6.8	1590			
	100	GORK		1039.5	1043.5		1590			
	100	GORK		1039.5	1046		550			
	950	GORK	46 C	1041	1041.8	2.6	4.6	1.7		
	950	GORK		1041	1042.7		5.4			
	127	TORN	47 GB	1041.5	1042.5	4.5	500 U	100		
	9100	GORK	1 S	1041.6	1043	17.4	3.5	1.7		
	113	POTS	41	1041.6	1042	17	300	5		
	127	TORN	46 C	1046	1052.5	45	200	30 U		
	7000	SAOP	23 GRF	1047.5E	1121	97.6U	18.4	9.4		23R
	100	GORK	27 RF	1049.6	1112.9	53.5	180			
	930	BORD	41 F	1055	1057.7	3	22	2		
	100	GORK		1118.6	1121	2.7	8700			
	113	POTS	41	1118.9	1119.1	2.2	1400	45		
	7000	SAOP	2 S/F	1120.8	1121	0.6	8.4	4.2		51R
	550	KIEV	40 F	1152.2	1153.7	1.7	4			
	113	POTS	6	1248.8	1248.8	0.1	250	80		
	18	MCMA	6	1438	1439	2			1	
	9240	ARCE	22	1441.8	1444.7	42				
	3750	TYKW	5 S	2204.3	2204.8	1	3.5	1		OL
	2000	TYKW	5 S	2204.4	2204.8	0.8	0.5	0.2		
	1000	TYKW	5 S	2204.5	2204.8	0.8	1	0.3		OR
	2800	OTTA	1 S	2204.5	2204.8	1.5	0.8	0.4		
	207	VORO	4 S/F	2313	2316	5	200			
2	9400	TYKW	5 S	0122.5	0123.6	3.5	6	2		OL
	2695	PENT	8 S	0123.2	0123.3	0.5	4.6			
	3750	TYKW	5 S	0123	0123.7	2	2.5	0.5		OL296041F
	2000	TYKW	5 S	0123	0123.7	1	2.8	0.6		OR
	3750	TYKW	5 S	0340	0341	3	2	1		OL
	100	GORK	44 NS	0422 E		518 D		5		
	200	GORK	43 NS	0422 E		506		30		
	221	ABST	43 NS	0500	0519.2	120	14			
	240	KIEL	44 NS	0543 E	0902	370	105	40		
	260	ONDR	44 NS	0650 E		503 D	29			
	245	SGMR	44 NS	1028 E	1530	482 D	79.1			3
	259	OWIN	44 NS	1250 E	1525	280 D	15	5		
	1000	TYKW	45 C	0755.9	0756	0.5	8	2		04R
	1000	TYKW	45 C	0756.3	0756.7	0.7	17	5		07R
	2000	TYKW	5 S	0756.3	0756.7	1	0.9	0.4		OR
	3750	TYKW	5 S	0756.3	0756.6	0.7	2.5	1		OL
	100	GORK	6 S	0842.2	0842.8	1	35			
	930	BORD	8 S	0933	0933.7	0.3	15	2		
	9240	ARCE	21	1118.6	1145.5	58				
	2695	PENT	21 GRF	1206	1212	55	1.6	0.8		
	2800	OTTA	1 S	1208.6	1210	2.5	2.8	1.4		
	9240	ARCE	1	1208.9	1209.6	3				
	2800	OTTA	20 GRF	1315	1400	95	1	0.5		
	2800	OTTA	24 R	1450	1510	20	1	0.5		
	2800	OTTA	27A RF	1450		63	1	0.8		
	2800	OTTA	24P R	1510		35	1			
	2800	OTTA	1 S	1539.5	1540	1	1	0.5		
	2800	OTTA	26 FAL	1545	1553	8	-1	-0.5		
	1415	SGMR	4 S/F	1557	1602	6.7	11.7	3.5		
	606	SGMR	2 S/F	1557.3	1559.9	5.9	7.1	2.1		
	2695	SGMR	22 GRF	1557.3	1601.8	14.6	6.5	3.9		
	410	SGMR	6 S	1557.5	1601.2	5.2	7.4	3		
	2800	OTTA	8 S	1557.9	1558	0.2	3.2			
	2800	OTTA	21 GRF	1557	1603	30	1.6	0.8		
	930	BORD	41 F	1557	1557.9	6	11	2		

SOLAR RADIO EMISSION
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APR 1976	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	2800	OTTA 8 S		1601.5	1602	0.8	16			
	9400	TYKW 5 S		2335	2335.5	2	5	2		OL
3	240	KIEL 44 NS		0543 E	0744	523	45	10		
	259	DWIN 44 NS		0605 E		700 D		5		
	260	ONDR 44 NS		0643 E		493 D	15			
	245	SGMR 44 NS		1026 E	1246.3	762 D	23			
	207	VORO 44 NS		2200	0154	240	14			
	9240	ARCE 1		1025.7	1026	0.8				
	550	KIEV 42 SER		1040.5	1044.6	5.5	10			
	550	KIEV 6 S		1102.2	1103	1.2	7			
	550	KIEV 40 F		1123	1123.2	2	3			
	259	DWIN 45 C		1244	1246	3	30	5		
	15400	SGMR 3 S		1631.6	1632.4	5	13	3.9		
	8800	SGMR 3 S		1631.6	1632.3	7.3	27.5	8.3		
	2695	SGMR 1 S		1631.9	1632.3	.9	3.1	.9		
	9240	ARCE 3		1631.9	1632.3	1				
	4995	SGMR 20 GRF		1632	1632.6	10.4	13.7	8.2		
	7000	SAOP 8		1632.3	1632.7	0.8	22.8	11.4		4L
	2800	OTTA 8 S		1632	1632.3	0.6	1.4	0.7		
	2800	OTTA 1 S		1704.8	1707	10	0.8	0.4		
	606	SGMR 1 S		1744.8	1744.9	.9	5.2	1.6		
	606	SGMR 2 S/F		1757.9	1759.9	5.4	6.1	1.8		
	2695	BOUL 3 S		2048.5	2051	7	2	1		
	2800	OTTA 20 GRF		2048	2049.5	35	3.2	1.1		
4	200	GORK 44 NS		0411 E		228 D		5		
	240	KIEL 44 NS		0543 E	0813	703	35	10		
	259	DWIN 44 NS		0610 E	0940	720 D	15	5		
	260	ONDR 44 NS		0720 E		462 D	16			
	245	SGMR 44 NS		1024 E	1332.4	765 D	62.6			3
	2800	OTTA 20 GRF		1415	1420	25	0.8	0.4		
	7000	SAOP 23 GRF		1459.7	1501.9	5	22.2	5.2		10R
	9240	ARCE 23		1459.9	1501.2	19				
	7000	SAOP 2 S/F		1501	1501.3	0.6	4.1	2.8		14R
	7000	SAOP 2 S/F		1501.6	1501.9	0.6	14.8	7.4		14R
	9240	ARCE 3		1501.6	1501.8	0.7				
	7000	SAOP 2 S/F		1541	1541.6	1.2	9.3	4.6		19R
	9240	ARCE 1		1541.1	1541.5	1				
	1420	BOUL 1 S		1545	1546.5	3.5	2	1		
	1415	SGMR 2 S/F		1555.7	1556.5	3.5	6.2	1.8		
	2800	OTTA 20 GRF		1555	1630	35	0.8	0.4		
	18	MCMA 6		1625	1626	2			1	
	18	MCMA 6		1729	1730	2			1	
	18	MCMA 41		1813	1815	5			1	
	18	MCMA 6		1838	1839	2			1	
	1420	BOUL 8 S		2015	2019	6.5	36	10		
	1420	BOUL 45 C		2031.5	2032.5	2.5	3	1		
	606	SGMR 22 GRF		2115.6	2119.4	10.4	8.3	2.5		
	1415	SGMR 46 C		2116.1	2119.6	23.7	121	36.3		
	1415	SGMR 46 C			2121.7		42			
	245	SGMR 6 S		2116.4	2119	9.8	52.1	15.6		
	410	SGMR 6 S		2116.8	2119.4	9.4	7.9	2.4		
	2800	OTTA 1 S		2117	2119	10	0.8	0.4		
	1420	BOUL 45 C		2153	2154	4.5	4	1		
	207	VORO 44 NS		2200	0043	240	30			
	207	VORO 46 C		2222	2223	4	39			
	207	VORO			2224.5		51			
	200	HIRA 43 NS		2250	0148	200	30	10		ML
	720	SYDN 40 F		2251.5	2252.1	17				
	1415	SGMR 2 S/F		2254	2255	4.6	5.7	1.7		
	606	SGMR 2 S/F		2254	2255	4.9	7.5	2.2		
	1420	SYDN 40 F		2254.3	2255	4				
5	100	HIRA 43 NS		0017	0230	317	40	6		0
	18	MCMA 6		0110	0112	2			2	
	18	MCMA 41		0125	0126	7			1	
	18	MCMA 41		0205	0212	7			2	
	200	GORK 43 NS		0406 E		174		5		
	100	GORK 43 NS		0406 E		231		5		
	240	KIEL 44 NS		0543 E		450	15	10		
	9240	ARCE 3		0929.5	0930	1.2				
	245	SGMR 6 S		2147.5	2151.2	16.5	21.8	6.5		
	100	HIRA 45 C		2148	2207.5	53	30	8		0
	200	HIRA 45 C		2148	2152.5	24	5	3		0
	410	SGMR 6 S		2148.5	2148.8	3.5	7.7	3.1		
6	550	KIEV 2 S/F		1209	1210.2	3	3			
	259	DWIN 45 C		1209	1211	3	65	5		
	260	ONDR 4 S/F		1211	1211.7	2	25	2.8		
	245	SGMR 6 S		1409.9	1411.5	4.4	55.9	11.2		
	259	DWIN 45 C		1410	1411	4	65	15		
	606	SGMR 2 S/F		1410.5	1411.6	5.2	4.8	1.4		
	260	ONDR		1410	1411		24			
	260	ONDR 45 C		1410	1413	5	25	6.7		

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APRIL 1976

APR 1976	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	410	SGMR	6 S	1411.3	1411.6	.5	6.2	1.8		3G
	18	MCMA	6	1600	1602	2			1	
7	240	KIEL	44 NS	0700 E	0903	660	165	15		
	160	DWIN	44 NS	0815 E		450 D		2		
	169	DWIN	44 NS	0815	1535	450 D		2		
	160	DWIN	45 C	0822	0822.5	1	35	5		
	169	DWIN	45 C	0822	0822.5	1	35	5		
	160	DWIN	45 C	1121	1121.5	1	65	5		
	169	DWIN	45 C	1121	1121.5	1	45	5		
	160	DWIN	45 C	1133	1133.5	1	150 D	5		
	169	DWIN	45 C	1133	1133.5	1	150 D	5		
	160	DWIN	45 C	1208	1208.5	1	10	2		
	169	DWIN	45 C	1208	1208.5	1	15	3		
	160	DWIN	45 C	1522	1522.5	1	65	5		
	169	DWIN	45 C	1522	1522.5	1	45	5		
8	9650	IRKV	2 S/F	0650.6	0653	3	25	4		12L
	240	KIEL	44 NS	0700 U		660 U	90	10		
9	200	GORK	43 NS	0430		138		5		
	100	GORK	44 NS	0500		180		10		
	127	TORN	44 NS	0630 E		330 D				
	240	KIEL	44 NS	0700 U		660 U	45	10		
	100	GORK	43 NS	0800		240		5		
	2695	PENT	1 S	0007	0009	8	1.4	0.7		
	200	HIRA	27 RF	0445	0605	125	12	5		O
	100	HIRA	27 RF	0455	0748	190	75	25		O
	930	BORD	41 F	1502	1502.8	1	16	2		
	18	MCMA	42	2144	2216	69			2	
	18	MCMA	42	2323	2334	24			1	
10	550	KIEV	40 F	1045	1045.7	1.2	2			
	18	MCMA	6	1606	1608	2			1	
11	2800	OTTA	20 GRF	1756	1804	33	1	0.6		
	18	MCMA	42	2139	2149	19			3	
	18	MCMA	42	2243	2251	42			2	
	18	MCMA	41	2341	2343	6			1	
12	930	BORD	41 F	0836	0836.2	0.2	43	2		
	550	KIEV	41 F	1100	1102	21.2	7			
	550	KIEV		1100	1121.2					
	2800	OTTA	8 S	1340.9	1341	0.5	4.8	2.4		
	18	MCMA	41	1418	1423	12			2	
	18	MCMA	6	1526	1530	4			1	
	9240	ARCE	2	1627.3	1627.7	1				
	18	MCMA	6	2125	2126	2			1	
	18	MCMA	6	2132	2134	2			1	
	18	MCMA	42	2145	2155	20			2	
13	930	BORD	46 C	1241.5	1241.6	0.2	10	2		
	2800	OTTA	20 GRF	1658	1715	50	1	0.6		
	18	MCMA	6	1727	1728	1			1	
	18	MCMA	42	2143	2157	15			2	
	18	MCMA	6	2224	2227	3			2	
14	2800	OTTA	20 GRF	1410	1430	80	2.6	1.3		
	18	MCMA	42	2207	2207	5			1	
	18	MCMA	41	2237	2238	6			1	
	18	MCMA	41	2305	2306	4			1	
	18	MCMA	6	2344	2345	1			1	
15	2930	VORO	46 C	0012.5	0018.8	7	140 D			
	408	TRST	42 SER	0957.7	0959.3	3.5	84			
	9240	ARCE	4	1330.9	1331.7	2.4				
	207	VORO	44 NS	2200	2208	54	24			
16	260	ONDR	4 S/F	0832	0833.2	2.5	38	2.1		
	200	GORK	43 NS	1000		159		5		
	260	ONDR	45 C	1006.3	1007	7.5	15	1.4		
	100	GORK	41 F	1028.9	1029.5	1.3	150			
	100	GORK		1028.9	1030		150			
	260	ONDR	4 S/F	1028	1029.1	2	24	2.8		
	2800	OTTA	22 GRF	1200	1202.5	37	2	1		
	245	SGMR	43 NS	1308.1	1918.5	614.9D	54.4			
	245	SGMR	6 S	1429.5	1429.6	.6	15.8	3.2		
	245	SGMR	6 S	1448.7	1449.5	1	119.7	35.9		
	410	SGMR	6 S	1448.8	1449.3	.7	25.7	7.7		
	1415	SGMR	1 S	1448.9	1449	.8	5.7	1.7		
	606	SGMR	1 S	1449	1449.2	.6	9	2.7		
	245	SGMR	6 S	1642.8	1643	.4	164.2	32.8		
	410	SGMR	6 S	1643	1643.1	.2	11.4	2.3		
	18	MCMA	6	1644	1646	2			1	
	245	SGMR	6 S	1731	1731.1	1	54	10.8		

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	410	SGMR	6 S	1731.4	1731.5	.4	3.1	.6		
	2800	OTTA	22 GRF	2040	2055	50	1	0.5		
	18	MCMA	6	2143	2146	3			2	
17	221	ABST	43 NS	0610	0612.5	18	9			
	200	GORK	8 S	0627.9	0630	0.4	165	80		
	260	ONDR	43 NS	0727		463	31			
	221	ABST	43 NS	0732.2	0739	27	9			
	200	GORK	6 S	0911.5	0911.8	0.5	200 D			
	245	SGMR	6 S	1313.3	1313.4	.7	13.1	3.9		
	18	MCMA	41	2155	2157	4			1	
	18	MCMA	6	2225	2227	2			1	
	18	MCMA	6	2313	2315	2			1	
18	18	MCMA	6	1711	1713	2			2	
	18	MCMA	6	2153	2155	2			1	
	18	MCMA	42	2206	2217	61			2	
	18	MCMA	41	2317	2325	9			2	
	18	MCMA	6	2357	2359	5			3	
19	260	ONDR	43 NS	1150		223 D	27			
	2800	OTTA	20 GRF	1245		125	1.6			
	18	MCMA	41	2233	2241	57			3	
20	3750	TYKW	20 GRF	0210	0240	100	3	1.5		0R296093F
	2000	TYKW	20 GRF	0210	0240	100	0.9	0.4		OL
	221	ABST	42 SER	0507.8	0551.8	118	10			
	221	ABST	7 C	0523.2	0523.5	1	19	7		
	221	ABST	7 C	0551.5	0551.8	1	38	16		
	228	HARS	43 NS	0635.3	0727	103	10	5		
	200	GORK	8 S	0653.4	0653.7	0.5	200	100		
	100	GORK	8	0752.5	0752.7	0.5	60 D	30		
	200	HIRA	45 C	0756.8	0757.5	2	75	20		WL
	100	HIRA	45 C	0757	0757.6	2	100	15		WR
	200	GORK	6 S	0757.4	0758.2	2	180	90		
	100	GORK	6 S	0757.6	0758.1	1.6	70	30		
	221	ABST	41 F	0839.2	0839.8	1	19			
	221	ABST	43 NS	0848	0848.8	4	16			
	260	ONDR	44 NS	0925 E		335 D	27			
	1420	BOUL	1 S	1345	1346	1.5	2	1		
	1470	POTS		1345	1346.3		3.3			
	1470	POTS	2	1345	1345.8	2	3.3	1.3		
	18	MCMA	6	1348	1349	2			1	
	1420	BOUL	45 C	1438.5	1441.5	4.5	5	2		
	1470	POTS	4	1444	1446.6	7	7.1	1.7		
	245	SGMR	43 NS	1654	1836.7	393 D	63.9			
	410	SGMR	43 NS	1744.5	1844.6	76.5	37.4			
	2695	SGMR	40 F	1739	1754.3	62	156	94		
	1420	BOUL	47 GB	1739.5	1812	63.5	927	146		
	2800	OTTA	21 GRF	1740	1845	230	6.4	3.2		
	2695	BOUL	49 GB	1744	1756	59.5	120	33		
	4995	SGMR	20 GRF	1749.9	1752.6	10.1	15	4.5		
	8800	SGMR	1 S	1750.8	1753.8	4.3	9.3	2.8		
	2800	OTTA	4 S/F	1750	1752.5	8.5	18	9		SPIKE=85FU
	4995	BOUL	3 S	1751	1752	5.5	11	3		
	2800	OTTA	40 F	1758.5	1819.5	42	10.6			
	18	MCMA	6	1807	1810	4			1	
	18	MCMA	6	1850	1852	3				
									1	
	1000	TYKW	45 C	2159	2200.2	1.4	8	1.5		
	1000	TYKW			2159.7		2.6			
21	260	ONDR	44 NS	0640 E		500 D	31	3		
	245	SGMR	44 NS	0956 E	2211.3	812 D	24.2			
	250	OWIN	44 NS	1020 E		130 D		5		
	259	OWIN	44 NS	1020 E		130 D		8		
	408	TRST	42 SER	1055.2	1055.9	1.8	17			
	160	OWIN	45 C	1112	1112.5	1	70	5		
	169	OWIN	45 C	1112	1112.5	1	70	5		
	160	OWIN	45 C	1121	1121.5	1	36	5		
	169	OWIN	45 C	1121	1121.5	1	43	5		
	160	OWIN	45 C	1128	1128.5	1	6	1		
	169	OWIN	45 C	1128	1128.5	1	10	2		
	160	OWIN	45 C	1218	1218.5	1	12	1		
	169	OWIN	45 C	1218	1218.5	1	15	2		
	2800	OTTA	22 GRF	1523.5	1525.1	15	0.8	0.4		
	18	MCMA	6	2221	2222	2			1	
22	260	ONDR	44 NS	0640 E		505 D	57	6		
	221	ABST	43 NS	0700	0714.5	38	8			
	221	ABST	43 NS	0806.8	0821	22	12			
	245	SGMR	43 NS	1409.2	1556	559.80	160.7			
	9240	ARCE	2	0828.6	0831	5				
	550	KIEV	6 S	1108	1108.7	1	3			
	550	KIEV	3 S	1151	1152	2.5	2			

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	550	KIEV	6 S	1351.5	1352.6	1.5	2			
	2800	OTTA	21 GRF	1500	1700	220	1.6	0.9		
	2800	OTTA	1 S	1557.5	1559	2	1	0.4		
	2695	BOUL	1 S	1558.5	1559.5	3	2	1		
	1420	BOUL	1 S	1558	1558.5	3	3	1		
	1420	BOUL	45 C	1706.5	1715	22	14	5		
	2695	BOUL	1 S	1728	1728.5	1.5	2	1		
23	260	ONDR	44 NS	0650 E		500 D	34			
	100	GORK	6 S	0845	0845.4	1	60	30		
	200	GORK	6 S	0845	0845.4	0.9	20	10		
	3000	POTS	3	1121.8	1122	0.7	14	6		
	160	DWIN	45 C	1122	1122.5	1	20	2		
	169	DWIN	45 C	1122	1122.5	1	35	5		
	9500	POTS	20	1127	1139	31	7.6			
	3000	POTS	20	1128	1139	20	2.4			
	9240	ARCE	1	1300.9	1301.7	2				
	9400	HUAN	8 S	1610.5	1611.4	1.9	55.4	9.4		41L
24	207	VORO	44 NS	0005	0015	105	14			
	260	ONDR	44 NS	0636 E		513 D	44			
	4995	BOUL	3 S	1735	1737.5	2.5	6	2		
	2695	BOUL	3 S	1736.5	1738	3	3	1		
	2800	OTTA	20 GRF	1950	2015	70	1	0.5		
	207	VORO	44 NS	2200	2205	40	13			
25	221	ABST	43 NS	0649.5	0701.8	28	9			
	260	ONDR	44 NS	0655 E		495 D	47	4		
	245	SGMR	44 NS	0952 E	1109.4	534.50	55.7			
	4995	BOUL	45 C	1722.5	1726.5	4	8	3		
	2695	BOUL	45 C	1723	1725	4.5	5	2		
	18	MCMA	6	1726	1728	2			1	
	9400	HUAN	20 S	1729.2	1730.7	4.2	17.8	5		
	4995	BOUL	3 S	1735	1736.5	2.5	8	3		
	2695	BOUL	3 S	1736	1737.5	3	4	1		
	2800	OTTA	26 FAL	2130	2150	20	-0.8	-0.4		
	9400	HUAN	20 S	2154.4	2203.3	14.2	14.2	5.6		L
	2800	OTTA	24 R	2158	2159.6	1.6	0.8	0.4		
	2800	OTTA	27 RF	2158		52	0.8	0.6		
	2800	OTTA	24P R	2159.6		30.4	0.8			
	18	MCMA	41	2216	2221	6			1	
26	1000	TYKW	5 S	0007	0007.3	1	1.4	0.3		
	260	ONDR	44 NS	0635 E		520 D	29			
	221	ABST	43 NS	0810.5	0813.5	19	9			
	245	SGMR	43 NS	1154	1405.8	700 D	26			
	250	DWIN	44 NS	1230		110 D		2		
	259	DWIN	44 NS	1230		110 D		2		
	160	DWIN	45 C	1354	1354.5	1	5	1		
	169	DWIN	45 C	1354	1354.5	1	15	2		
	2800	OTTA	20 GRF	1937	1943	40	0.8	0.4		
27	160	DWIN	45 C	1030.7	1031	0.4	35	3		
	169	DWIN	45 C	1030.7	1031	0.4	35	3		
28	260	ONDR	42 SER	1140	1333.2	157	14			
	550	KIEV	41 F	1237.2	1237.5	3.7	2			
	2800	OTTA	20 GRF	1953	2005	40	1.4	0.9		
	2800	OTTA	1 S	2117	2118.5	4	0.8	0.4		
	18	MCMA	41	2147	2152	7			1	
	2695	PENT	240 R	2320	0110	110	2.6	1.3		
	2695	PENT	24P R	0101		40 D	2.6			
29	260	ONDR	42 SER	0834.3	0835	31	13			
	250	DWIN	45 C	0834	0834.5	1	33	5		
	259	DWIN	45 C	0834	0834.5	1	38	4		
	9240	ARCE	3	1024.6	1024.9	1.3				
	9240	ARCE	29	1025.9		10.5				
	260	ONDR	4 S/F	1051.3	1052	1.5	12			
	1470	POTS	1	1124.2	1124.4	0.8	1.1			
	3000	POTS	1	1124.2	1124.8	1.1	5.4	1.9		
	9500	POTS	3	1124.2	1124.5	1.3	26	10		
	7000	SAOP	28 PRE	1124	1124.4	0.4	5.1	2.6		
	7000	SAOP	4	1124.4	1124.6	0.6	50	25		6R
	7000	SAOP	29 PBI	1125	1125	9.3	17			6R
	2800	OTTA	1 S	1124.5	1124.9	1.5	4.4	1.2		
	2800	OTTA	20 GRF	1350	1443	120	1.4	0.7		
	2800	OTTA	21 GRF	1552	1745	178	2	1.1		
	245	SGMR	43 NS	1609	2138.8	448 D	21.4			
	8800	SGMR	22 GRF	1852.3	1912.5	58.7	116.5	69.9		
	1415	SGMR	22 GRF	1857	1910.3	48.9	290	174		
	245	SGMR	6 S	1857.1	1912	27	50.2	15.1		
	4995	SGMR	22 GRF	1900.1	1910.8	46.1	47.5	28.5		
	2800	OTTA	23 GRF	1900	1906	70	5.4	2.7		
	15400	SGMR	22 GRF	1901.1	1910.6	31.5	38.8U	23.3U		

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	2695	SGMR	22 GRF	1901.5	1910.7	31.7	30.8	18.5		
	4995	BOUL	23 GRF	1902	1909.5	35.5	39	7		
	410	SGMR	6 S	1907	1910.9	11	64.2	19.3		
	1420	BOUL	45 C	1908	1909.5	9	182	36		
	606	SGMR	22 GRF	1909.8	1910.6	12.1	219.5	131.7		
	7000	SAOP	26 PRE	1907.9	1909.8	1.9	13.8	4.2		
	7000	SAOP	4 S/F	1909.8	1910.6	3.9	140.8	62.7		7R
	7000	SAOP	29 PBI	1913.7	1913.7	21.5	17.3	8.6		
	2800	OTTA	4 S/F	1909.8	1910.8	6	21	5.2		
	2695	BOUL	8 S	1910	1911.5	9.5	22	7		
	2800	OTTA	8 S	1928.2	1928.6	0.7	1			
	1420	BOUL	8 S	1929.5	1930.5	1.5	4	1		
	2800	OTTA	8 S	1930.9	1931.1	0.5	1.4	0.7		
	720	SYDN	2 S/F	2244.7	2245	0.6				
	500	HIRA	45 C	2244.8	2245	0.5	16	8		
30	500	HIRA	45 EC	0054.3	0054.3	0.8	15	10		
	1000	TYKW	45 C	0054	0056	3	1.5	0.4		0R
	500	HIRA	45 EC	0055.7	0056	1.3	55	15		
	200	HIRA	45 C	0055.8	0056	1	450	160		WL
	100	HIRA	45 C	0055.9	0056	1	40	15		O
	2300	TYKW	5 S	0055	0056	2	0.7	0.3		0R
	500	HIRA	45 C	0138.5	0139.3	1.7	40	8		
	200	GORK	43 NS	0405 E		335 D		5		
	260	ONDR	44 NS	0640		512 D	155	15		
	127	TORN	44 NS	0750 E		430 D				
	245	SGMR	44 NS	0943 E	1415.9	835 D	34			
	9400	TYKW	20 GRF	0550	0557	100	9	4		0L
	3750	TYKW	20 GRF	0550	0557	100	3	1.5		0L
	2000	TYKW	20 GRF	0553	0605	100	1.4	0.7		0R
	950	GORK	41 F	0831	0832.9	16	8.3			
	260	ONDR	4 S/F	0841.8	0843.4	5	32	5.6		
	808	ONDR	4 S/F	0842.2	0843.5	3.5	98	14.3		
	510	POTS		0842.5	0842.7	2.1	21	2		
	3000	POTS	4	0842.6	0843.5	13	11 U			
	536	ONDR	45 C	0842.7	0843.7	4	55	12.6		
	8800	MANI	4 S/F	0842.8U	0844.5U	8.2U	61 U	21.8U		PEAKING
	2695	MANI	4 S/F	0842.8U	0843.6U	12.8U	12 U	5 U		PEAKING
	4995	MANI	4 S/F	0842.8U	0844.5U	6.7U	28.6U	11.9U		PEAKING
	606	MANI	40 F	0842.9	0843.6	13.4	51	18.6		
	1415	MANI	40 F	0843 U	0843.6U	13.5U	45.1U	19.6U		PEAKING
	1470	POTS	4	0843	0843.5	5	29 U			
	650	GORK	46 C	0843	0843.5	3.1	51			
	9100	GORK	3 S	0843	0843.7	2	5.4	2.7		
	500	HIRA	45 C	0843	0843.4	3	60	30		
	200	HIRA	45 C	0843.2	0843.5	1	35	15		O
	2950	GORK	3 S	0843.2	0843.6	2	15	5.4		
	200	GORK	45 C	0843.3	0843.5	1.1	150			
	9240	ARCE	1	0843.6	0843.9	0.8				
	950	GORK		0843.8			65			
	200	GORK		0843.9			150			
	650	GORK		0844			43			
	9240	ARCE	29	0844.4		8.5				
	650	GORK		0844.5			17.5			
	550	KIEV	40 F	1105	1109	37	4			
	550	KIEV		1105	1141					
	7000	SAOP	1	1133.7	1134.3	1	8.6	4.3		
	18	MCMA	6	1133	1135	2			2	
	1415	SGMR	4 S/F	1235.2	1244.8	40.7	39.3	11.8		
	2695	SGMR	4 S/F	1237	1243.7	30.2	98.8	29		
	2695	SGMR	4 S/F		1244.3		78			
	8800	SGMR	22 GRF	1237.9	1243.8	17.4	18.2	10.9		
	410	SGMR	7 C	1238.5	1245.2	23.7	282	56.5		
	606	SGMR	47 GB	1241.2	1245.1	17.7	1596	320		
	4995	BOUL	2 SF	1241.5	1244	3.5	18	6		
	3000	POTS	4	1242	1244.5	23	64	16		
	9500	POTS	3	1242	1243.7	3	15			
	1470	POTS	4	1242	1245	8	44	13		
	245	SGMR	7 C	1242.2	1243.2	38.2	345.4	76		
	245	SGMR	7 C		1244.7		380			
	260	ONDR	45 C	1242.3	1243	6.5	155	56		
	260	ONDR		1242.3	1244.8		142			
	9400	HUAN	20 S	1242.3	1244.2	23.5	15.1	4.9		
	2800	OTTA	4 S/F	1242.3	1244.3	7	42	12.3		
	2800	OTTA	29 PBI	1249.3	1249.3	85	2.4	1.2		
	113	POTS	45	1242.4	1244.2	6	350	12		
	536	ONDR	4 S/F	1242.5	1245	9	319	40.4		
	229	HARS	47 GB	1242.5	1244.6	6	250	71		
	7000	SAOP	28 PRE	1241.9	1242.6	0.7	4.3	2		
	7000	SAOP	4 S/F	1242.6	1244.3	3.8	42.7	22.2		12R
	7000	SAOP	29 PBI	1246.5	1246.5	290.6	8.6			13R
	808	ONDR	45 C	1242.6	1245	19	430	46		
	15400	SGMR	22 GRF	1242.7	1244.5	17.3	10.7U	6.4U		
	510	POTS	45	1242.8	1245	4.6	280	50		
	9240	ARCE	3	1242.8	1244.2	3				

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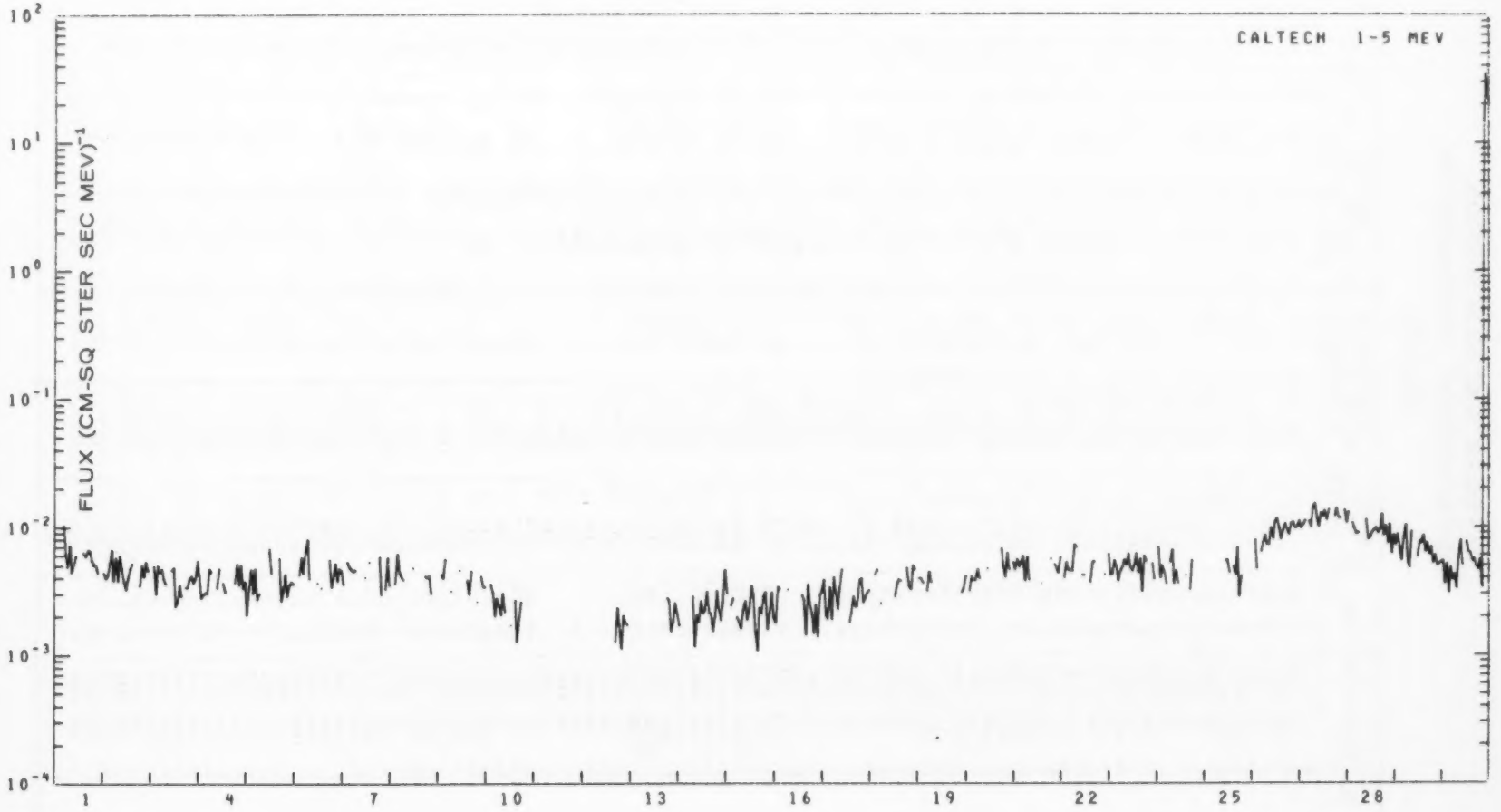
30	4995	SGMR	4 S/F	1242.9	1244.3	23.2	40	12		
	1420	BOUL	4 SF	1242	1244	4	28	7		
	930	BORD	46 C	1242	1245	18	152	15		
	408	TRST	47 GB	1243.7	1245.3	5.3	1200 U			
	9240	ARCE	29	1245.8		63				
	2695	BOUL	45 C	1246.5U	1247	9.5	61	11		
	228	HARS	40 F	1257.2	1257.5	0.8	20	11		
	228	HARS	40 F	1300.2	1300.7	1	44	20		
	127	TORN	5 S	1300.5	1300.9	1	50			
	550	KIEV	27 RF	1453.5	1459	8	5			
	2800	OTTA	20 GRF	1550	1620	120	2	1		
	7000	SAOP	26 FAL	1737.1	1737.1	192.9D	8.6	4.3		
	7000	SAOP	2 S/F	1839.2	1639.6	0.9	11.7	5.9		
	2695	BOUL	47 GB	2045	2110	91.5	1776	370		
	1420	BOUL	47 GB	2049.5	2117.5	100	1404	144		
	4995	BOUL	47 GB	2049.5	2108.5	109.5	2395	806		
	1415	SGMR	47 GB	2050	2107.1	37.8	2717	815		
	1415	SGMR	47 GB		2117.8		1830			
	1415	SGMR	29 PBI	2127.8	2127.8	83.4	9.1	3.6		
	4995	SGMR	47 GB	2050.2	2108.7	30.8	2046	614		
	4995	SGMR	29 PBI	2121	2121	40	51.6	20.6		
	15400	SGMR	47 GB	2054.3	2108.7	31.1	2540 U	762 U		
	15400	SGMR	29 PBI	2125.4	2125.4	46.8	81.5U	32.6U		
	8800	SGMR	47 GB	2054.7	2107.7	29.9	2630	789		
	8800	SGMR	29 PBI	2124.6	2124.6	36.4	72	28.8		
	2695	SGMR	47 GB	2055.3	2108.7	24.7	781	234		
	2695	SGMR	29 PBI	2120	2120	41	10.2	4		
	606	SGMR	47 GB	2055.6	2107	72.3	3018	905		
	606	SGMR	47 GB		2118.3		745.5			
	606	SGMR	29 PBI	2207.9	2207.9	44.6	21.1	8.4		
	410	SGMR	49 GB	2100.9	2104.4	103.1	3000	900		
	410	SGMR	49 GB		2120.5		825			
	500	HIRA		2101	2141.3		620			
	500	HIRA		2101	2131.3		470			
	500	HIRA		2101	2118.2		550			
	500	HIRA	48 C	2101	2103.4	106	1560	150		
	245	SGMR	49 GB	2101.7	2103.4	99.1	897	269		
	245	SGMR	49 GB		2124.2		161.6			
	2800	OTTA	28 PRE	2047	2105	14	23	7.8		
	2800	OTTA	47 GB	2101	2109	24	1670	525		
	2800	OTTA	30 PBI	2125	2125	260 D	27			
	9400	HUAN	28 PRE	2048.2	2102.1	13.9	37.9	16.9		9R
	9400	HUAN	47 C	2102.1	2108.6	18.5	3187.8	1071.3		9R
	9400	HUAN	29 PBI	2120.6	2120.6	44.4	162.8	73.3		
	35000	SGMR	47 GB	2102.3	2108.9	18.2	1176	353		
	35000	SGMR	29 PBI	2120.5	2120.5	51.2	175	69.9		
	100	HIRA	48 C	2102 U	2103.6	94	1200	130 D		HR
	200	HIRA		2102 U	2117.7		260			O
	200	HIRA		2102 U	2108		760			WL
	200	HIRA	48 C	2102 U	2103.5	.69	500	50		O
	100	HIRA		2102 U	2109 U		1200 D			WL
	100	HIRA		2102 U	2105.6U		1200 D			WL
	207	VORO	49 GB	2103	2107	29	320	90		
	207	VORO	29 PBI	2132	2143	24	12	10		
	18	MCMA	41	2105	2117	23			2	
	1000	TYKW	45 C	2111 E	2115.1U	14 D	200 U	110 U		
	2000	TYKW	45 C	2115 E	2115.3U	10 D	300 U	100 U		SL
	2000	TYKW	30 PBI	2125		35	9	3		
	1000	TYKW	45 C	2125	2130	8	10	1.5		
	1000	TYKW	30 PBI	2125		32	8	1.5		
	1000	TYKW	45 C	2133	2140.3	13	8	1		
	18	MCMA	6	2134	2135	2			1	
	2000	TYKW	5 S	2149	2152	10	1.5	0.9		OR
	1000	TYKW	45 C	2149	2155.9	8	18	3.5		
	2800	OTTA	1 S	2149	2151.2	4.5	1.4	0.7		
	1000	TYKW	45 C	2158	2158.7	1	4	1.3		
	1000	TYKW	45 C	2159	2202.9	15	5	1		
	1000	TYKW	45 C	2221	2222.2	2	19	4		
	1000	TYKW	45 C	2233	2237.6	14	2.8	1.1		
	606	MANI	4 S/F	2255.6	2256.8	2.6	20.5	6.5		
	1415	MANI	3 S	2255.6	2256.7	2.3	12	4.2		
	410	SGMR	6 S	2255.8	2256.7	4.9	75	23		
	245	SGMR	6 S	2255.8	2256.5	4	4.6	1.4		
	1420	BOUL	8 S	2255	2256.5	2	10	3		
	500	HIRA	45 C	2256	2256.9	2	40	15		
	606	SGMR	3 S	2256.1	2256.9	1.6	17.6	5.3		
	1415	SGMR	3 S	2256.1	2256.6	1.6	12	3.6		
	1000	TYKW	5 S	2256	2256.7	1.5	30	8		
	2000	TYKW	5 S	2256	2256.7	1.5	9	3		55R
	500	HIRA	45 C	2303	2313.6	16	30	8		
	606	MANI	41 F	2303.5	2313.8	15.5	11.4	1.9		
	1000	TYKW	5 S	2313	2313.4	1	3.7	0.8		
	500	HIRA	45 C	2331.6	2339	15	25	8		
	606	MANI	41 F	2331.7	2337.4	12.8	16.7	3.8		

IMP 7 AND 8 ELECTRONS

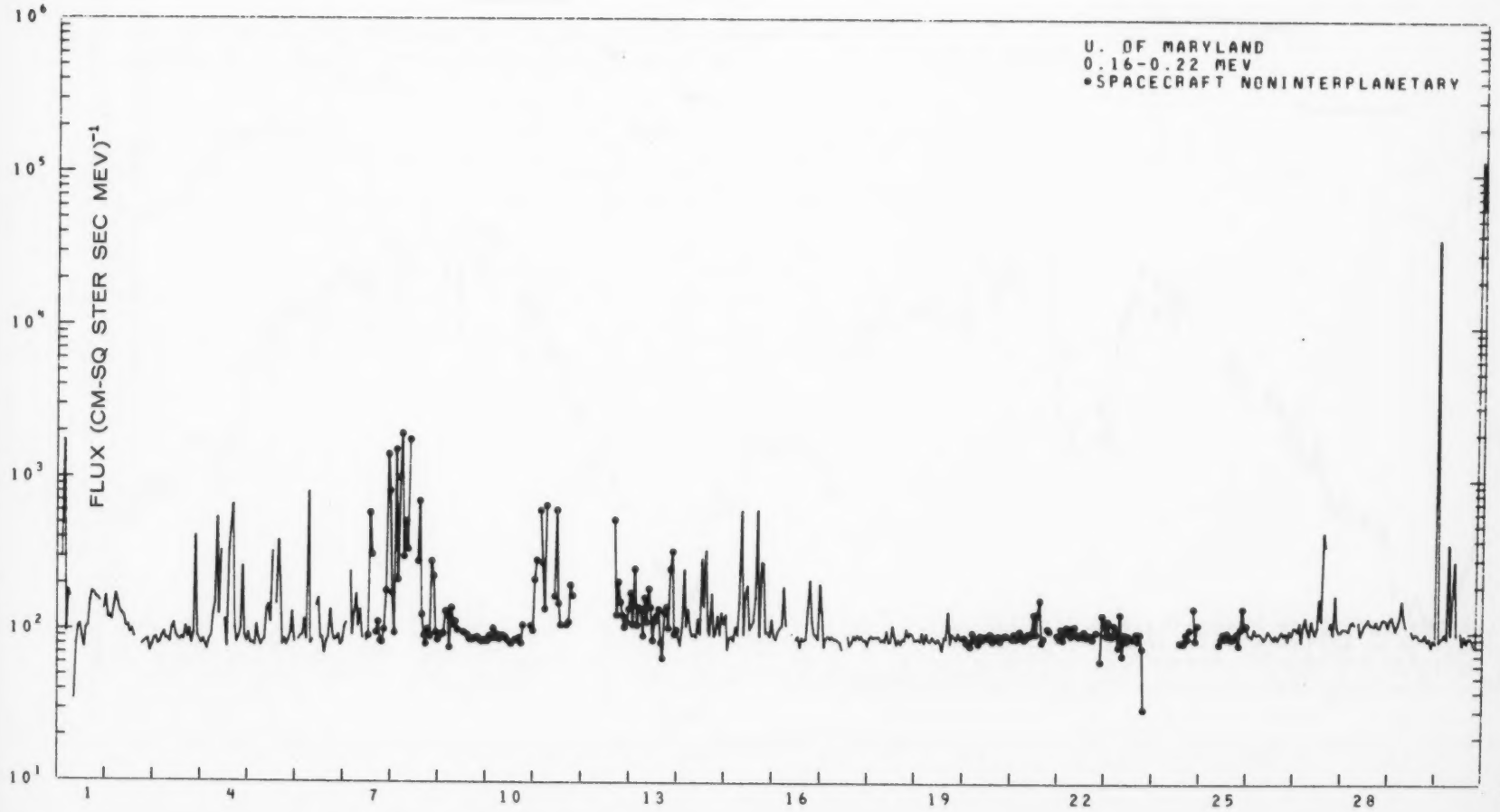
20 Apr 76

APRIL 1976



IMP 7 AND 8 LOW ENERGY PROTONS

APRIL 1976

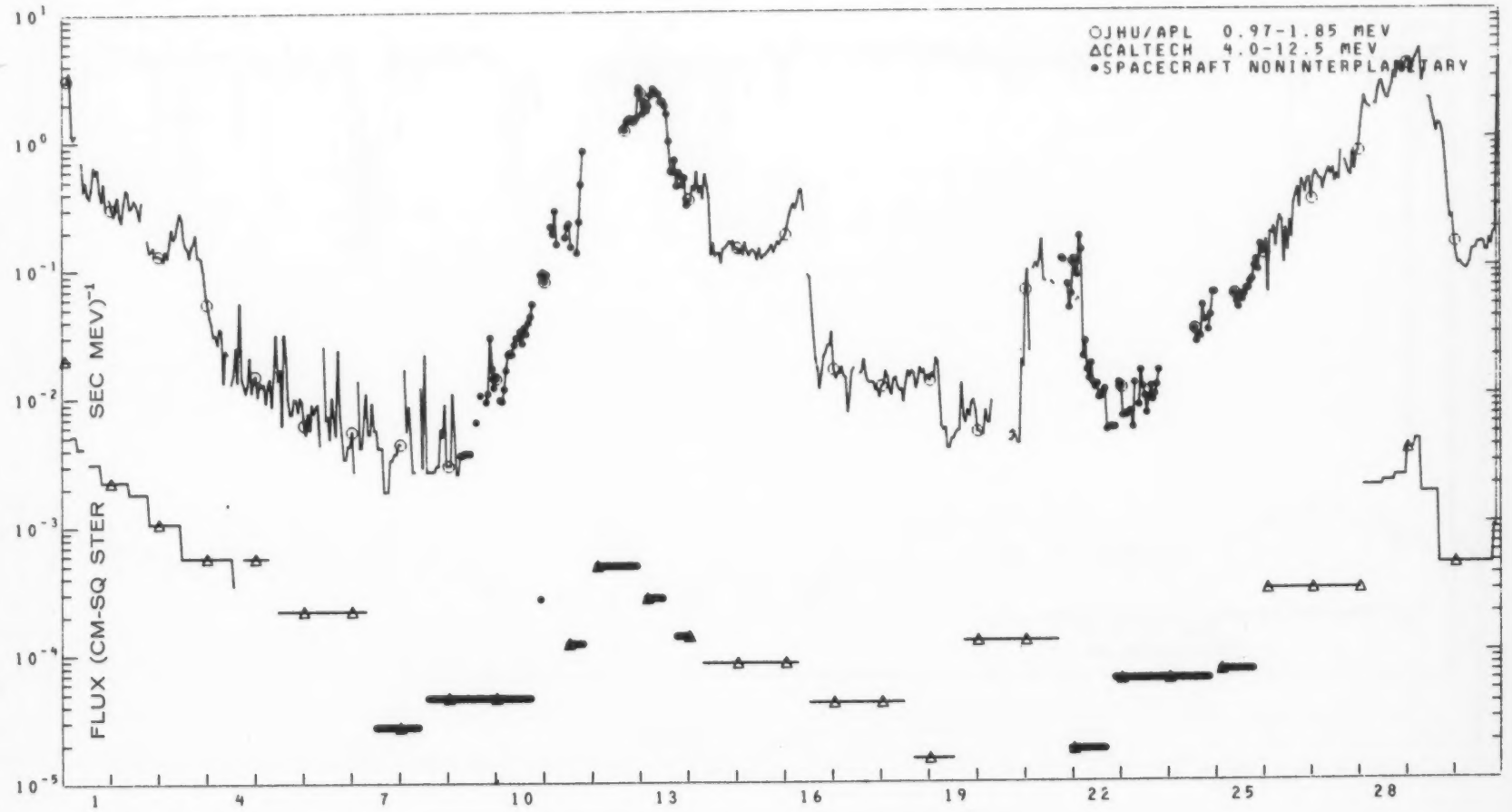


21
Apr 76

IMP 7 AND 8 INTERMEDIATE ENERGY PROTONS

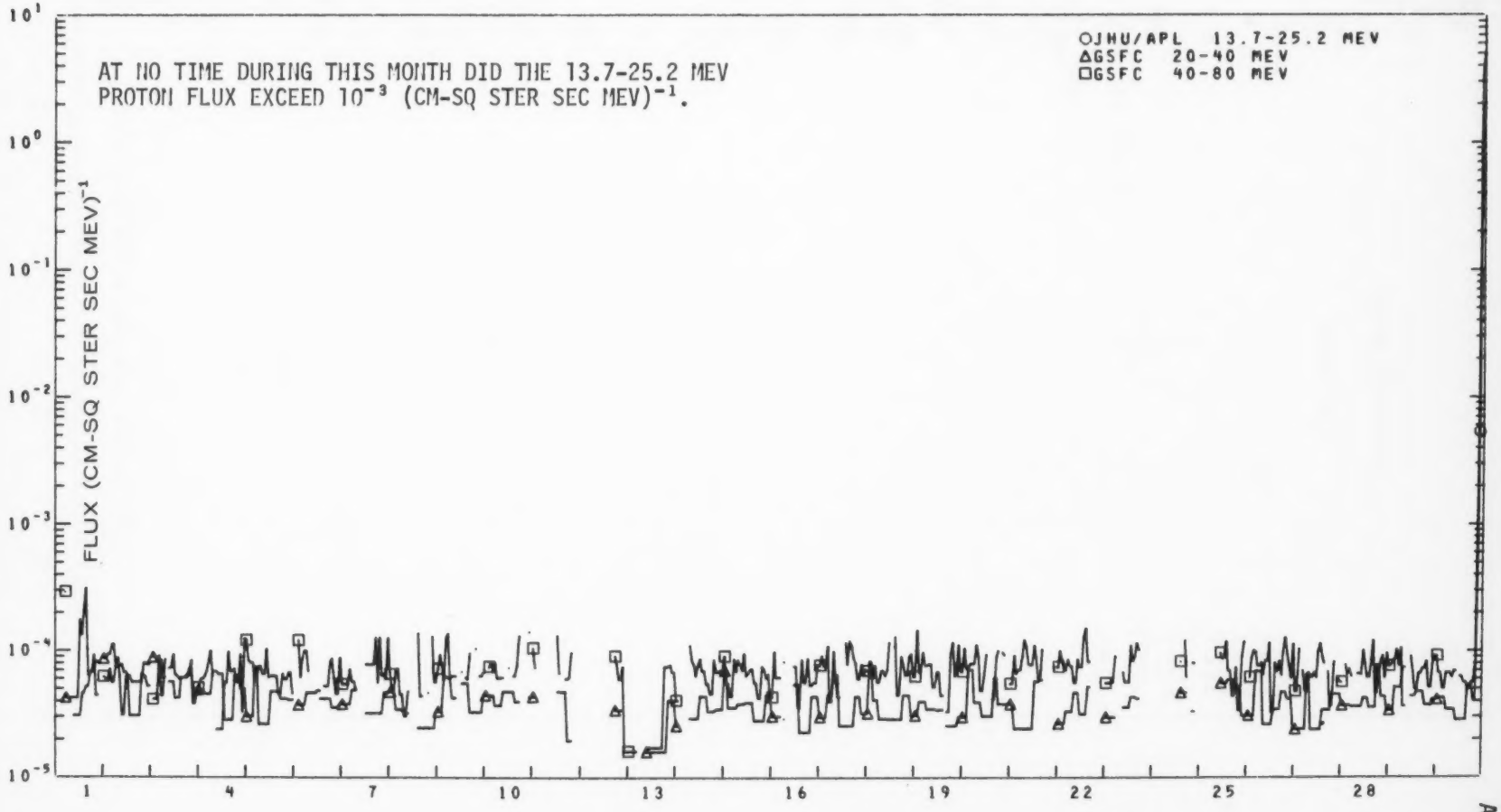
22 Apr 76

APRIL 1976



IMP 7 AND 8 HIGH ENERGY PROTONS

APRIL 1976

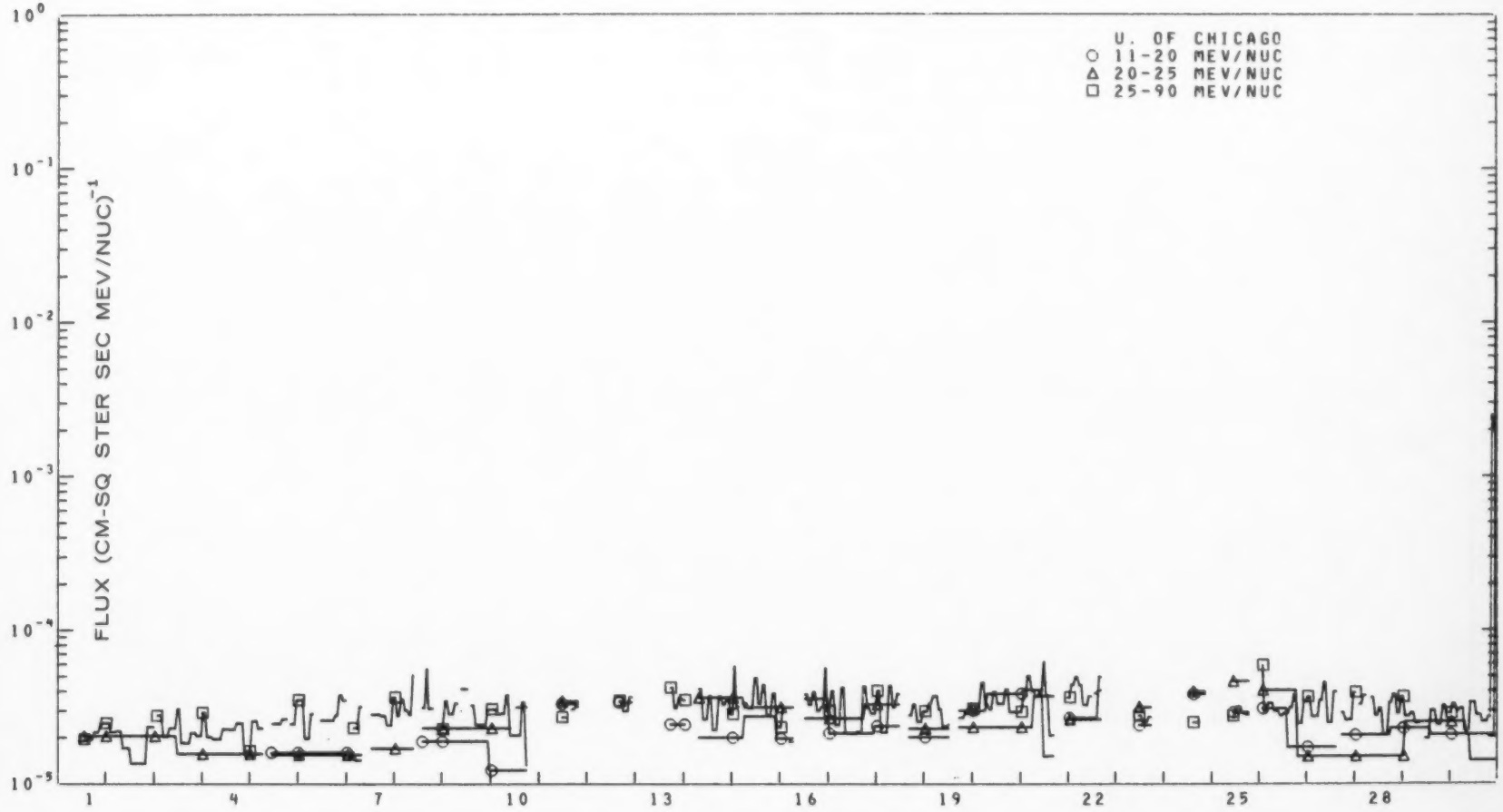


23 Apr 76

IMP 7 AND 8 ALPHA PARTICLES

24 Apr 76

APRIL 1976



MARCH 1976 DATA

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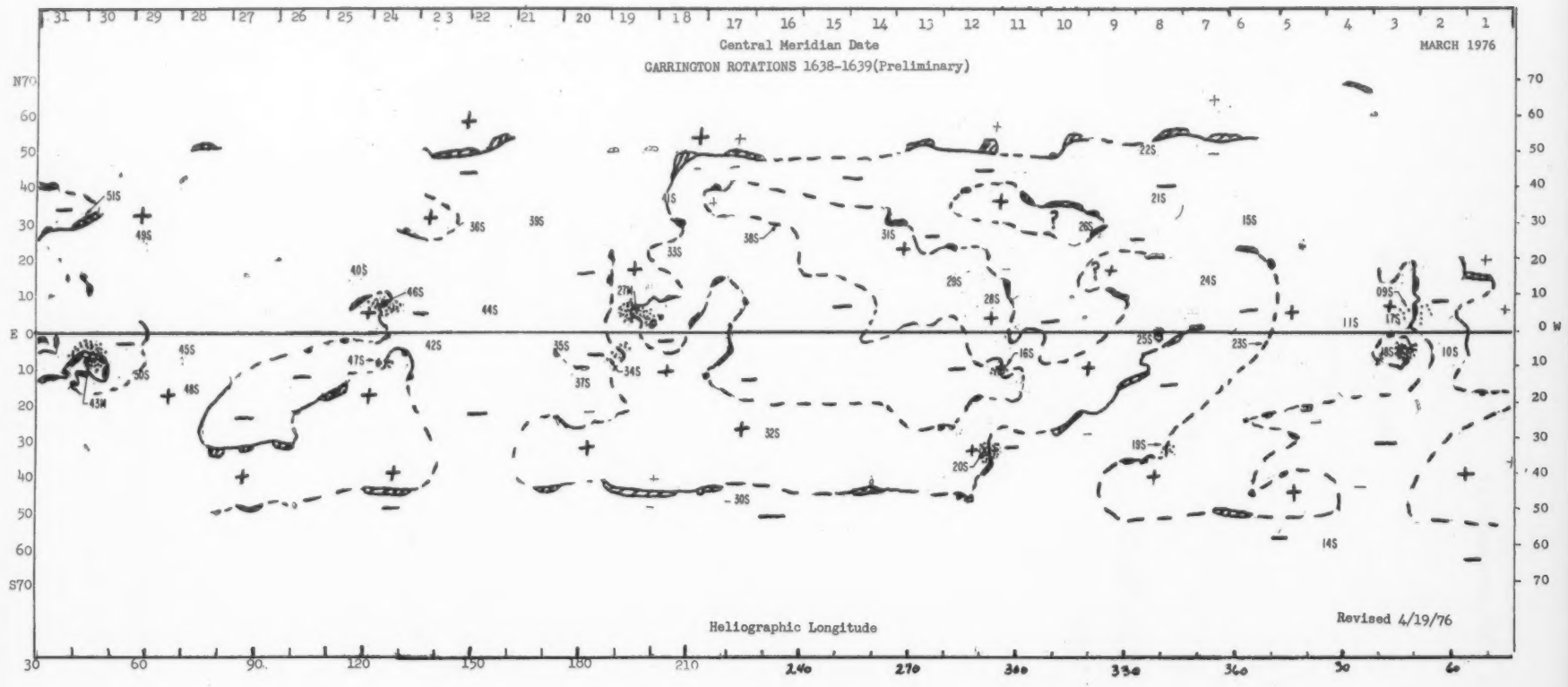
ABBREVIATED CALENDAR RECORD

Hα SYNOPTIC CHART

MARCH 1976



ABBREVIATED CALENDAR RECORD

Mar. 1, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 17	Kp	4- 4o 3o 3o 3+ 3- 2+ 3+
	sc	
Aurora	USSR	ϕ = 60° 1500-1900 (HA 1-2); ϕ = 58° 2000-2100 (HB2), 2300-2400 (SB1); ϕ = 59° 2200 (SB2)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- no data 360° SW-
Indices		Rz: 0 10 cm flux: 69 Flare: 0/24.0 Ca: no data Ip: 0 Ia: 5
Solar Regions		
Sunspots		

Mar. 2, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 32	Kp	3o 5- 4- 3+ 4o 5- 5o 5o
	sc	
Aurora	USSR	ϕ = 58° 0000-0100 (SB1), 2000 and 2200 (HB2), 2100-2300 (R$_1$R2); ϕ = 60° 1400-1500 (SA2), 1600 (HA2)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data SW- no data
Indices		Rz: 0 10 cm flux: 69 Flare: 0/19.9 Ca: no data Ip: 0 Ia: 4
Solar Regions		(14110) S06
Sunspots		S08

Mar. 3, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 27	Kp	4o 4o 4o 3+ 4o 4o 4+ 4+
	sc	
Aurora	USSR	ϕ = 58° 1300-1400 (HB1); ϕ = 59° 1800, 2400 (HP1), 2100 (HA2), 2200 (HR); ϕ = 60° 1900-2000 and 2300 (HA2)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- no data 0°, 5° SE- W. Limb 7 days later: NW- no data SW- no data
Indices		Rz: 0 10 cm flux: 69 Flare: 0/21.2 Ca: no data Ip: 0 Ia: 6
Solar Regions		(14109) N07 (14117) N03 (14118) S06
Sunspots		(19663) S04 (βp 2 (19664) S08 (αp)2 CMP March 4

Mar. 4, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 12	Kp	4+ 3o 2o 3- 2+ 2+ 2+ 2-
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data 295°, 345°-355° SW- no data 185°
Indices		Rz: 0 10 cm flux: 68 Flare: 0/19.5 Ca: no data Ip: 0 Ia: 5
Solar Regions		(14111) N02 (14114) S60
Sunspots		

28
Mar 76

Mar. 5, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 15	Kp	2o 3- 3- 3- 2o 3- 2o 5o
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW-no data 285°- 330° SW- no data 185°
Indices		Rz: 0 10cm flux: 69 Flare: 0/24.0 Ca: 0.2 Ip: - Ia: 2
Solar Regions		
Sunspots		

Mar. 6, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 33	Kp	3+ 4- 3o 3+ 4- 5o 5- 6o
	sc	
Aurora	USSR	ϕ = 59° 1500 and 2000-2100 (HA2), 1600-1900 (HP2)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-
Indices		Rz: 10 10cm flux: 69 Flare: 0/22.5 Ca: no data Ip: - Ia: 2
Solar Regions		(14123) S04 (14115) N30
Sunspots		

Mar. 7, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 28	Kp	5- 4- 3+ 4- 3+ 5o 3+ 4o
	sc	
Aurora	USSR	ϕ = 58° 1400-1800 (HA1), 2000-2200 (HB1)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- no data SW- no data
Indices		Rz: 12 10cm flux: 69 Flare: 6/24.0 Ca: 1.7 Ip: - Ia: 5
Solar Regions		(14124) N14
Sunspots		

Mar. 8, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 42D	Kp	6- 6o 6- 4+ 4o 4- 3o 4o
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data SW- no data
Indices		Rz: 7 10cm flux: 69 Flare: 3/24.0 Ca: 2.0 Ip: 0 Ia: 6
Solar Regions		14119 S32 (14121) N37 (14122) N50 (14125) S02
Sunspots		

Mar. 9, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 36D	Kp	4- 5o 4o 4- 4+ 4+ 5o 5+
	sc	
Aurora	USSR	ϕ = 58° 1400 (HA1)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- no data 340° SW- no data 180° - 200°
Indices		Rz: 10 10cm flux: 69 Flare: 3/24.0 Ca: 1.6 Ip: - Ia: 7
Solar Regions		(14126) N28
Sunspots		

Mar. 10, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 32D	Kp	4+ 5o 3+ 4- 4- 5- 4o 5o
	sc	
Aurora	USSR	ϕ = 59° 1500 (HA2), 1800 (R_1R2), 2100 (HP1), 2200-2300 (R_1R1); ϕ = 60° 1600-1700 (HA2), 1900 (R_2B3), 2000 (HA1); ϕ = 49° 2100-2200 (HB1)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- SW-
Indices		Rz: 12 10cm flux: 69 Flare: 0/24.0 Ca: 1.3 Ip: - Ia: 7
Solar Regions		
Sunspots		

Mar. 11, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 27	Kp	5- 4o 3o 4+ 4o 4o 4+ 3+
	sc	
Aurora	USSR	ϕ = 59° 0000-0100 (R1R1); ϕ = 60° 1700 (HA2), 1800-1900 (R_1A2)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- SW-
Indices		Rz: 13 10cm flux: 70 Flare: 3/23.8 Ca: 2.0 Ip: - Ia: 8
Solar Regions		14116 S10 (4)
Sunspots		(19666) S12 (Bf)2

Mar. 12, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 26	Kp	5- 5- 4o 4+ 3+ 3o 3+ 4-
	sc	
Aurora	USSR	ϕ = 60° 2200-2300 (HA2)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data SW- no data
Indices		Rz: 13 10cm flux: 70 Flare: 0/24.0 Ca: 2.2 Ip: - Ia: 8
Solar Regions		(14128) N08 14120 S34 (14129) N13
Sunspots		19665 S34 (Bf)3 CMP March 13

Mar. 13, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES

Bursts: cm, dm, m, Dkm

SID

X-Rays

Ap 110 — Kp: 4o 2+ 2+ 2o 2+ 2- 3- 2+ — sc

Aurora — USSR: ϕ = 60° 0000-0100 (HA2) — W.E.

Cosmic Rays

Green Corona — E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- no data SW- no data

Indices — Rz: 13 10cm flux: 72 Flare: 4/20.5 Ca: 1.9 Ip: - Ia: 4

Solar Regions

Sunspots

Mar. 14, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES

Bursts: cm, dm, m, Dkm

SID

X-Rays

Ap 14 — Kp: 5- 4+ 3- 2+ 2o 1+ 1o 2- — sc

Aurora — USSR — W.E.

Cosmic Rays

Green Corona — E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data SW- no data

Indices — Rz: 22 10cm flux: 71 Flare: 1/24.0 Ca: 3.0 Ip: - Ia: 5

Solar Regions — (14131) N26

Sunspots

Mar. 15, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES

Bursts: cm, dm, m, Dkm

SID

X-Rays

Ap 15 — Kp: 2o 3- 3o 2+ 3o 4- 3- 4o — sc

Aurora — USSR — W.E.

Cosmic Rays

Green Corona — E. Limb 7 days earlier: NE- no data 0° SE- W. Limb 7 days later: NW- no data SW- no data

Indices — Rz: 16 10cm flux: 70 Flare: 0/23.6 Ca: 2.4 Ip: - Ia: 3

Solar Regions

Sunspots

Mar. 16, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES

Bursts: cm, dm, m — noise storm — ns, Dkm

SID

X-Rays

Ap 18 — Kp: 3o 4- 4- 2+ 3+ 3+ 4+ 2+ — sc

Aurora — USSR: ϕ = 60° 1600-1800 (HA2) — W.E.

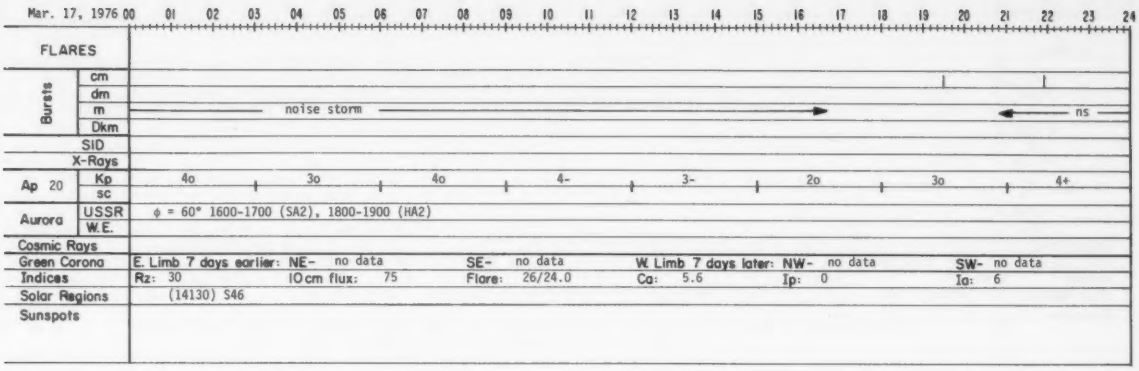
Cosmic Rays

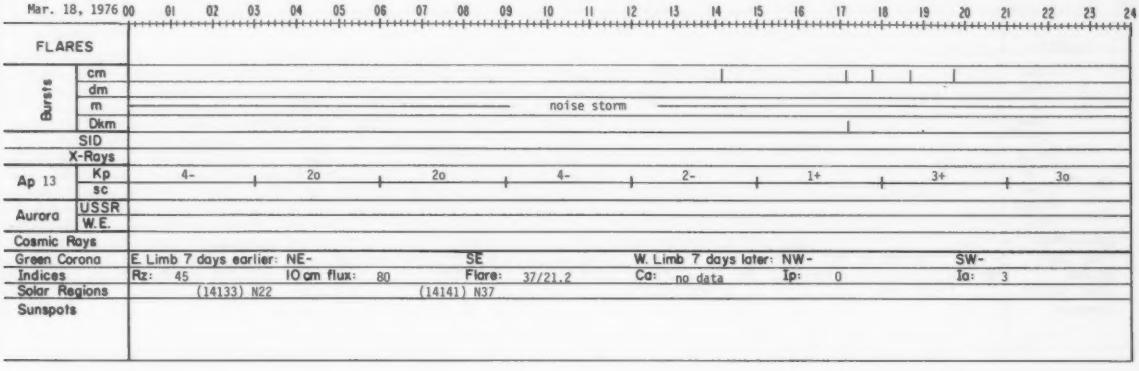
Green Corona — E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- no data SW- no data

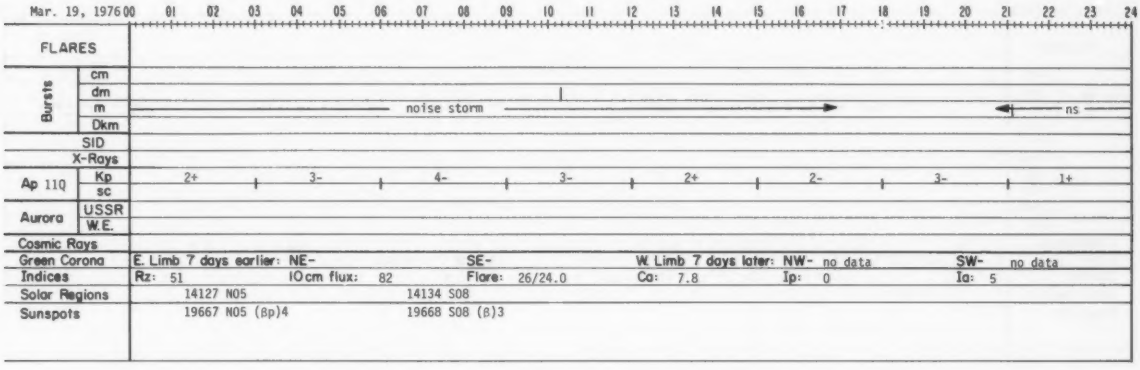
Indices — Rz: 11 10cm flux: 73 Flare: 6/23.8 Ca: 2.5 Ip: 0 Ia: 3

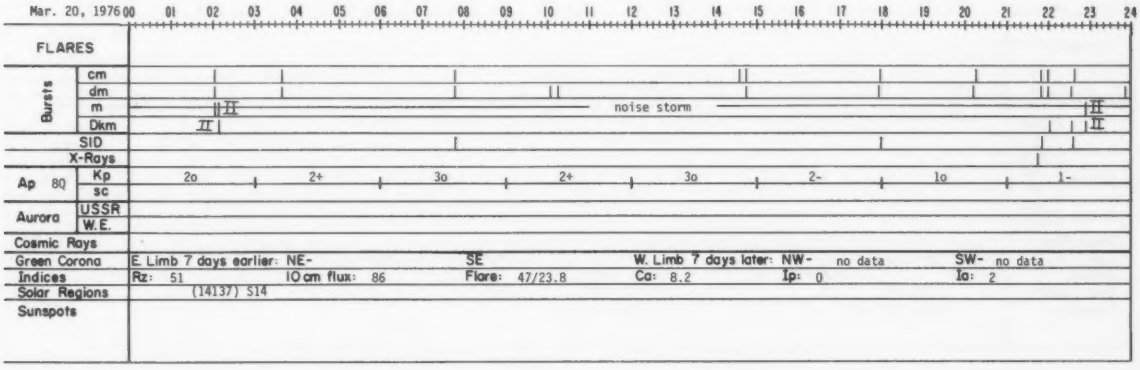
Solar Regions — (14138) N29 (14132) S29

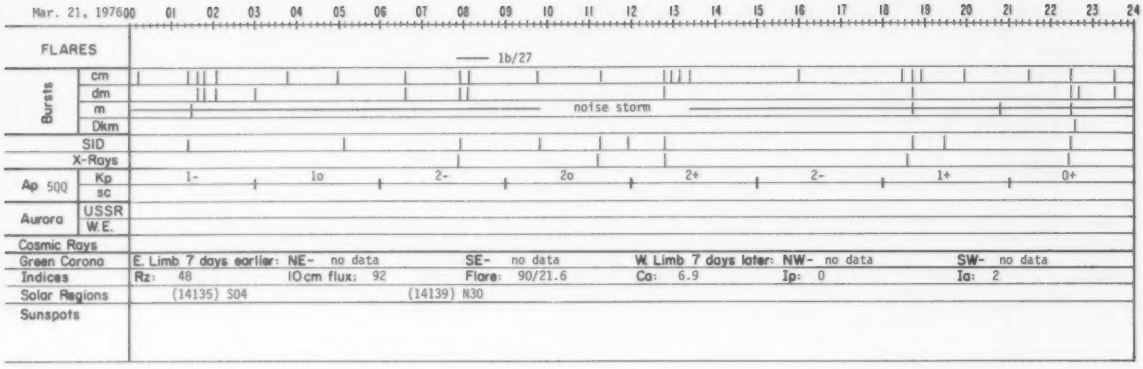
Sunspots

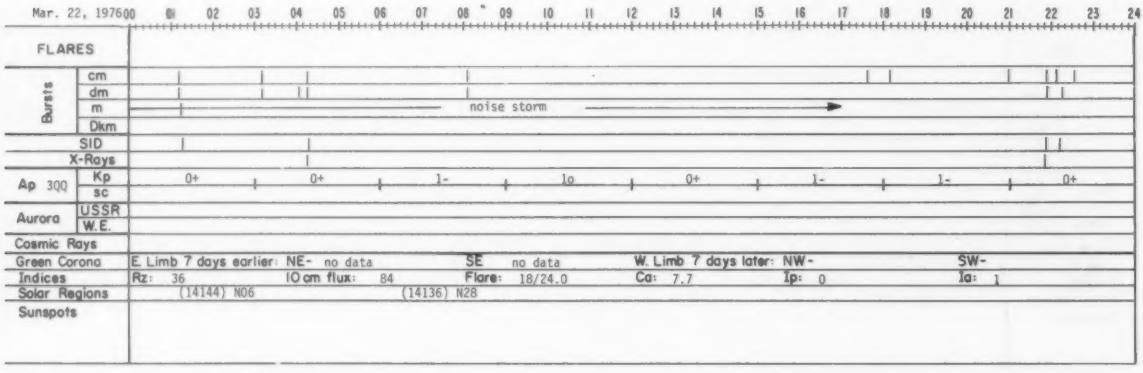

Mar. 17, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
ns
SID
X-Rays
Ap 20
Kp
sc
4o 3o 4o 4- 3- 2o 3o 4+
Aurora
USSR
W.E.
ϕ = 60° 1600-1700 (SA2), 1800-1900 (HA2)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data
W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 30 10cm flux: 75 Flare: 26/24.0 Ca: 5.6 Ip: 0 Ia: 6
Solar Regions
(14130) S46
Sunspots

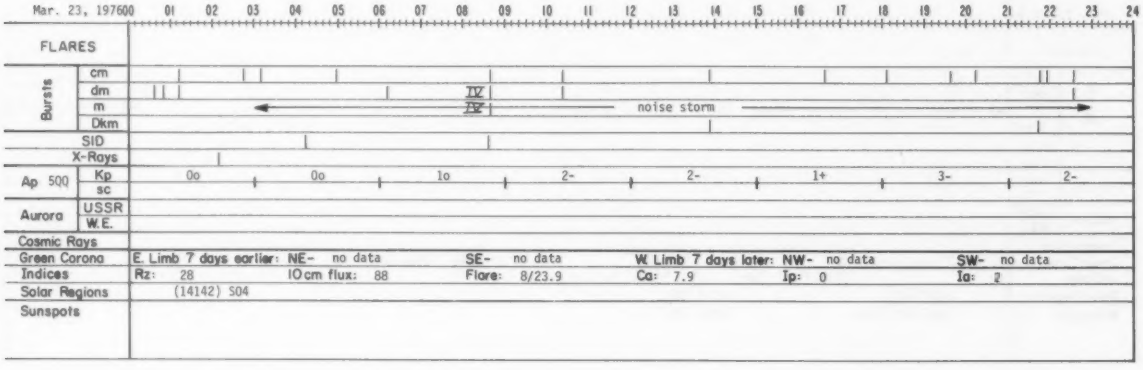

Mar. 18, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 13
Kp
sc
4- 2o 2o 4- 2- 1+ 3+ 3o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE
W. Limb 7 days later: NW- SW-
Indices
Rz: 45 10cm flux: 80 Flare: 37/21.2 Ca: no data Ip: 0 Ia: 3
Solar Regions
(14133) N22 (14141) N37
Sunspots

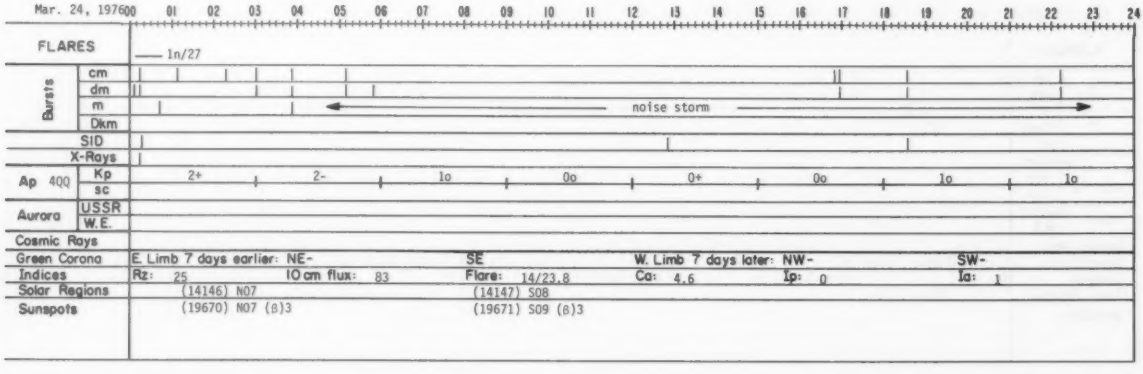

Mar. 19, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
ns
SID
X-Rays
Ap 11Q
Kp
sc
2+ 3- 4- 3- 2+ 2- 3- 1+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE-
W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 51 10cm flux: 82 Flare: 26/24.0 Ca: 7.8 Ip: 0 Ia: 5
Solar Regions
14127 N05 14134 S08
Sunspots
19667 N05 (βp)4 19668 S08 (β)3

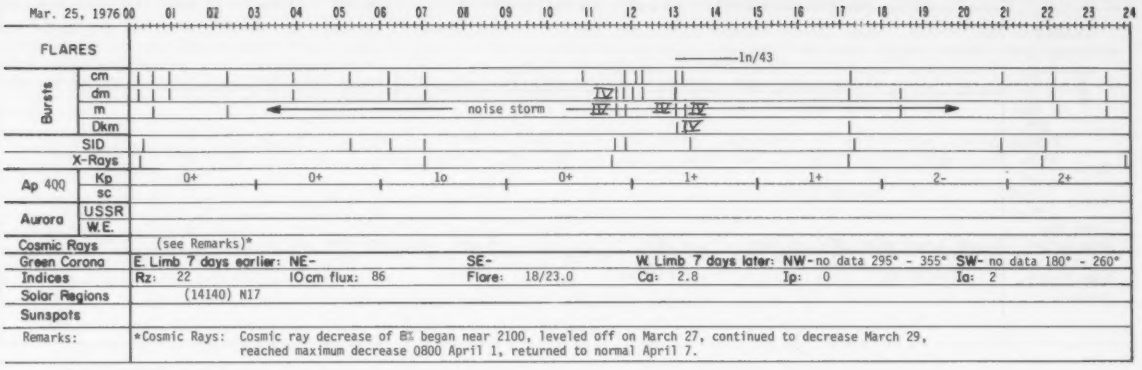

Mar. 20, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 8Q
Kp
sc
2o 2+ 3o 2+ 3o 2- 1o 1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE
W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 51 10cm flux: 86 Flare: 47/23.8 Ca: 8.2 Ip: 0 Ia: 2
Solar Regions
(14137) S14
Sunspots

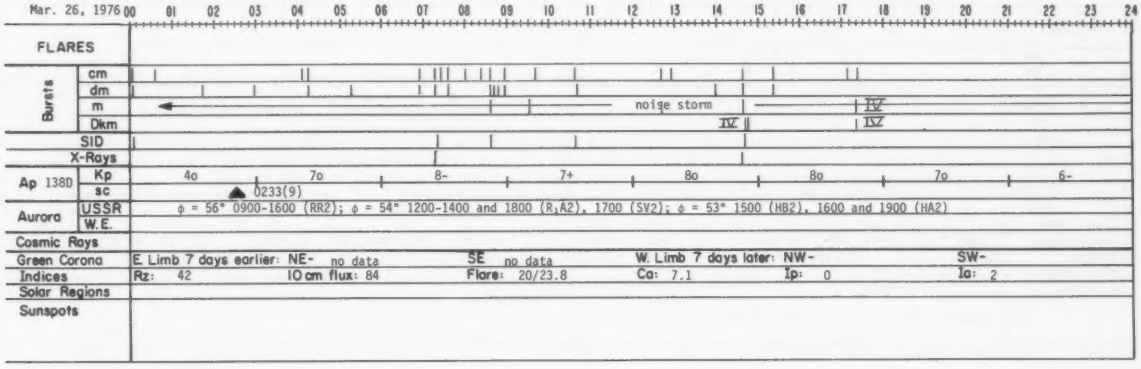

Mar. 21, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1b/27
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 5QQ
Kp
1- 1o 2- 2o 2+ 2- 1+ 0+
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 48 10cm flux: 92 Flare: 90/21.6 Ca: 6.9 Ip: 0 Ia: 2
Solar Regions
(14135) S04 (14139) N30
Sunspots

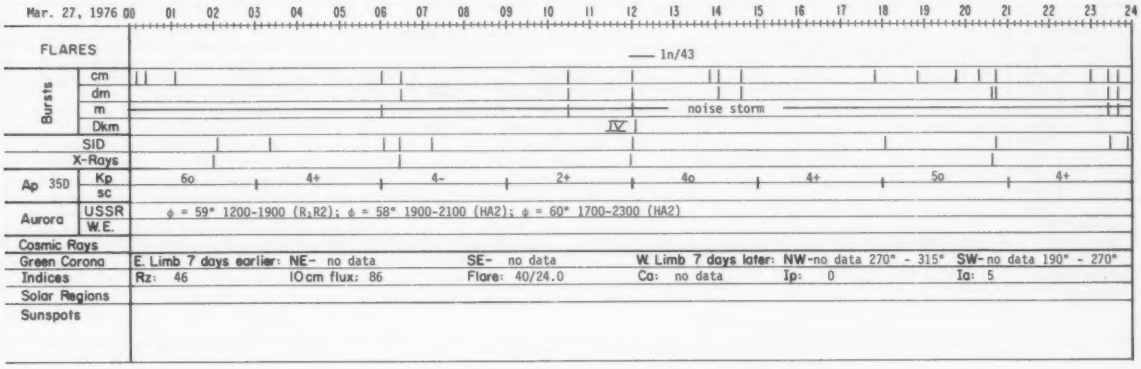

Mar. 22, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 3QQ
Kp
0+ 0+ 1- 1o 0+ 1- 1- 0+
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-
Indices
Rz: 36 10cm flux: 84 Flare: 18/24.0 Ca: 7.7 Ip: 0 Ia: 1
Solar Regions
(14144) N06 (14136) N28
Sunspots

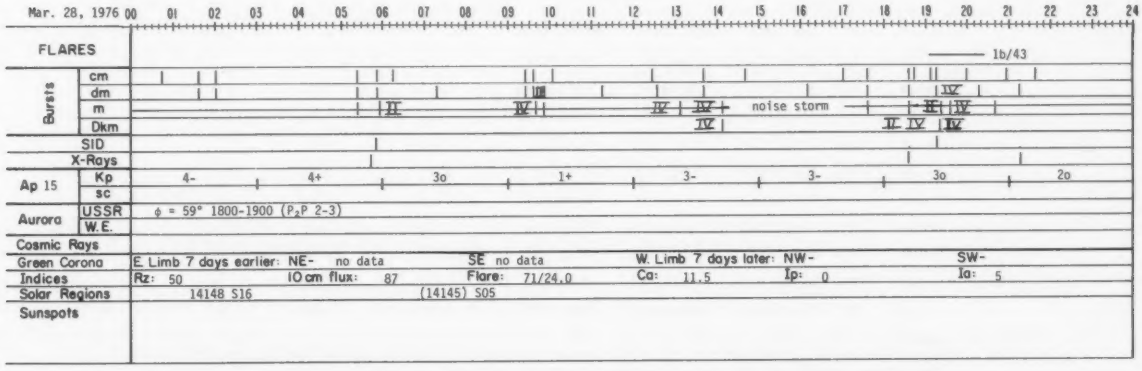

Mar. 23, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 5QQ
Kp
0o 0o 1o 2- 2- 1+ 3- 2-
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 28 10cm flux: 88 Flare: 8/23.9 Ca: 7.9 Ip: 0 Ia: 2
Solar Regions
(14142) S04
Sunspots

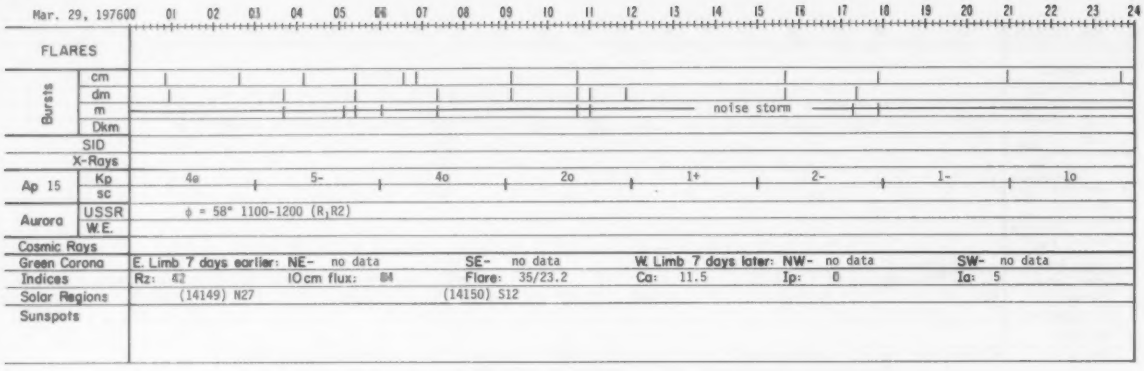

Mar. 24, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/27
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 4QQ
Kp
2+ 2- 1o 0o 0+ 0o 1o 1o
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- SW-
Indices
Rz: 25 10cm flux: 83 Flare: 14/23.8 Ca: 4.6 Ip: 0 Ia: 1
Solar Regions
(14146) N07 (14147) S08
Sunspots
(19670) N07 (8)3 (19671) S09 (8)3

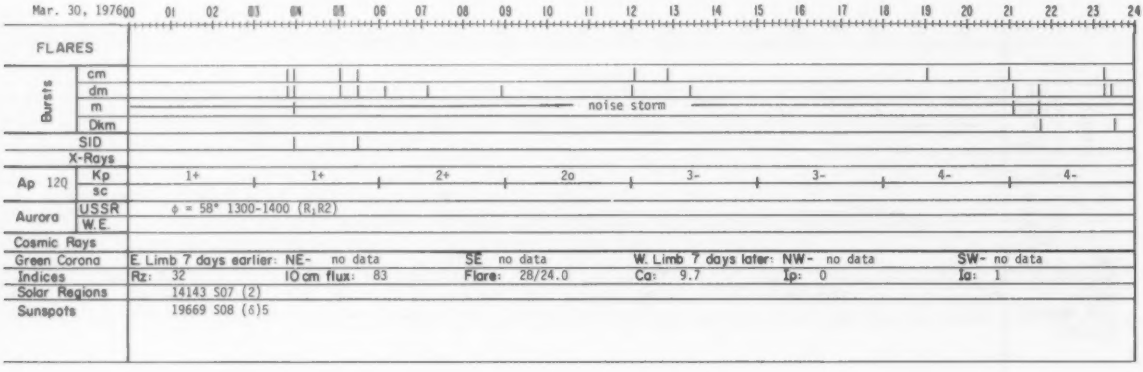

Mar. 25, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/43
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 400
Kp
0+ 0+ 1o 0+ 1+ 1+ 2- 2+
sc
Aurora
USSR
W.E.
Cosmic Rays
(see Remarks)*
Green Corona
E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- no data 295° - 355° SW- no data 180° - 260°
Indices
Rz: 22 10cm flux: 86 Flare: 18/23.0 Ca: 2.8 Ip: 0 Ia: 2
Solar Regions
(14140) N17
Sunspots
Remarks:
*Cosmic Rays: Cosmic ray decrease of 8% began near 2100, leveled off on March 27, continued to decrease March 29, reached maximum decrease 0800 April 1, returned to normal April 7.

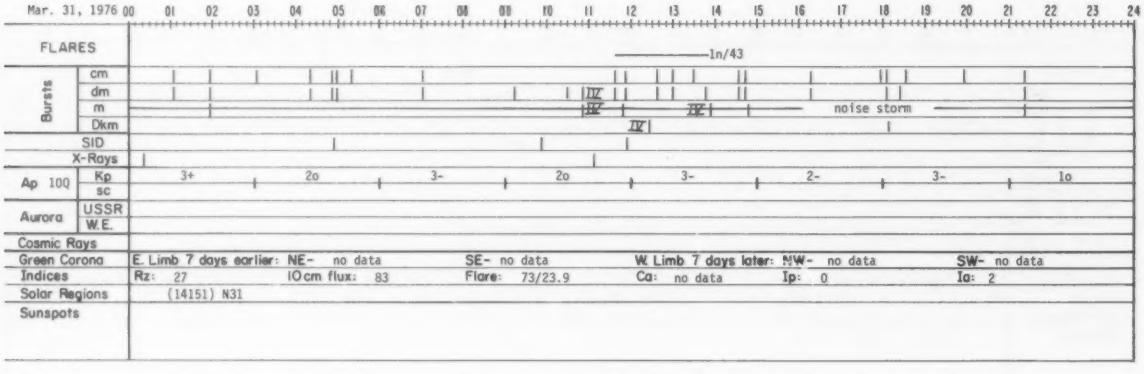

Mar. 26, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 138
Kp
4o 7o 8- 7+ 8o 8o 7o 6-
sc
0233(9)
Aurora
USSR
φ = 56° 0900-1600 (RR2); φ = 54° 1200-1400 and 1800 (R1A2), 1700 (SV2); φ = 53° 1500 (HB2), 1600 and 1900 (HA2)
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-
Indices
Rz: 42 10cm flux: 84 Flare: 20/23.8 Ca: 7.1 Ip: 0 Ia: 2
Solar Regions
Sunspots


Mar. 27, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/43
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 35
Kp
6o 4+ 4- 2+ 4o 4+ 5o 4+
sc
Aurora
USSR
φ = 59° 1200-1900 (R1R2); φ = 58° 1900-2100 (HA2); φ = 60° 1700-2300 (HA2)
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data 270° - 315° SW- no data 190° - 270°
Indices
Rz: 46 10cm flux: 86 Flare: 40/24.0 Ca: no data Ip: 0 Ia: 5
Solar Regions
Sunspots


Mar. 28, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1b/43
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 15
Kp
4- 4+ 3o 1+ 3- 3- 3o 2o
sc
Aurora
USSR
φ = 59° 1800-1900 (P2P 2-3)
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-
Indices
Rz: 50 10cm flux: 87 Flare: 71/24.0 Ca: 11.5 Ip: 0 Ia: 5
Solar Regions
14148 S16 (14145) S05
Sunspots







REGIONAL FLARE INDEX
INCLUDES ALL FLARES

MC MATH PLAGE NO.	LAT	CMP DATE	DATE FIRST FLARE	DATE LAST FLARE	FLARE-INDEX SUM	FLARE-INDEX MEAN	TOTAL NO. OF FLARES
14109	N 7	76/03/03.3	76/02/26	76/02/26	.84	.84	1
14115	S 9	76/03/03.7	76/03/07	76/03/09	8.18	2.06	4
14124	N14	76/03/07.4	76/02/26	76/02/26	.84	.84	1
14116	S10	76/03/11.5	76/03/07	76/03/07	1.90	1.90	1
14120	S34	76/03/12.1	76/03/08	76/03/16	13.72	1.52	6
14127	N 6	76/03/19.3	76/03/16	76/03/25	252.76	25.28	67
14134	S 7	76/03/19.9	76/03/17	76/03/21	12.15	2.43	3
14146	N 7	76/03/24.8	76/03/28	76/03/31	10.29	2.57	12
14147	S 9	76/03/24.9	76/03/26	76/03/26	5.28	5.28	1
14143	S 7	76/03/30.9	76/03/23	76/04/05	316.87	22.63	99

Note:
Because of differences in method of calculation, the dates of Central Meridian Passage for the McMath Plage Regions vary somewhat from those given elsewhere. Any region not listed here produced no flares during its disk passage.

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Prepared by World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, Colorado, U.S.A.

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UAG-52 "Experimental Comprehensive Solar Flare Indices for Certain Flares, 1970-1974", compiled by Helen W. Dodson and E. Ruth Hedeman, McMath-Hulbert Observatory, The University of Michigan, 895 Lake Angelus Road North, Pontiac, Michigan 48055 U.S.A., November 1975, 27 pages, price 60 cents.

UAG-53 "Description and Catalog of Ionospheric F-Region Data, Jicamarca Radar Observatory (November 1966 - April 1969)", by W. L. Clark and T. E. Van Zandt, Aeronomy Laboratory, NOAA, Boulder, Colorado 80302 and J. P. McClure, University of Texas at Dallas, Dallas, Texas 75230, April 1976, 10 pages, price 33 cents.

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UAG-56 "Iso-intensity Contours of Ground Magnetic H Perturbations for the December 16-18, 1971 Geomagnetic Storm", by Y. Kamide, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado 80302 and Geophysical Institute, University of Alaska, Fairbanks, Alaska 99701 (currently Guest worker at Data Studies Division, NOAA/EDS/NGSDC, Boulder, Colorado 80302), April 1976, 37 pages, price $1.39.

UAG-57 "Manual on Ionospheric Absorption Measurements", edited by K. Rawer, Institut für Physikalische Weltraumforschung, Freiburg, G.F.R., June 1976, 202 pages, price $4.27.

UAG-58 "ATS6 Radio Beacon Electron Content Measurements at Boulder, July 1974 - May 1975", by R. B. Fritz, Space Environment Laboratory (currently with Wave Propagation Laboratory), NOAA, Boulder, Colorado 80301 USA, September 1976, 61 pages, price $1.04.

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SOLAR-GEOPHYSICAL DATA QUESTIONNAIRE

The questionnaire sent to users of SGD in February was totalled at the end of July with the results as shown in the table below. 447 replies were received at that time. A few (6) have been received since then but are not included in the tabulation. Since not all replies were checked for all categories it is probable that some data are being used less than the percentages indicate. However, the relative use of different types of data remains about the same when the assumption is made that no check for a category means lack of interest in the data.

The suggestions concerning need for more of various types of data will influence decisions in future acquisitions. The many favorable comments on the present publication were appreciated. For the present there are no plans to cut back on any categories except when the data become no longer available. Appreciation should also be expressed here to the many contributors of data to *Solar-Geophysical Data* and for their extraordinary efforts in submitting data on such a timely basis.

The Editor

SOLAR-GEOPHYSICAL DATA QUESTIONNAIRE PART I (PROMPT REPORTS) Data from month before date of issue	Data Used				
	Often	Sometimes	Never	Totals	Percent of usage
ALERT PERIOD					
IUWDS Alert Periods (Advance and Worldwide)	51	147	156	354	56%
DAILY SOLAR INDICES					
12-Month Tables Sunspot Number, R_Z, and 2800 MHz Flux Adjusted to 1 A.U.	234	146	21	401	95
Combined Table Sunspot Numbers and Solar Fluxes	216	141	26	383	93
Graph of Sunspot Cycles	222	164	22	408	95
Zurich Smoothed Observed & Predicted Sunspot Number	215	150	41	406	90
SOLAR FLARES					
Hα Solar Flares	191	157	53	401	87
No-Flare-Patrol Chart	110	140	98	348	72
SOLAR RADIO WAVES					
169 MHz Solar Interferometric Chart - Nançay	58	147	144	349	59
10.7 cm East-West Solar Scans - ARO, Ottawa	81	162	123	366	66
21 cm East-West Solar Scans - Fleurs	48	148	155	384	60
43 cm East-West Solar Scans - Fleurs	47	142	161	350	54
Selected Fixed-Frequency Occurrences	83	134	166	383	57
SOLAR WIND MEASUREMENTS					
Scintillation Observations	54	141	161	356	55
SPACECRAFT OBSERVATIONS					
Pioneer					
Solar Wind	115	171	97	383	75
Electric Field	75	96	142	313	55
Magnetic Field	111	156	112	379	70
Cosmic Ray Protons	112	154	101	367	72
SOLAR X-RAY RADIATION					
SMS-2 GOES	97	154	102	353	71
INFERRED IP MAGNETIC FIELD POLARITIES	82	103	77	262	71

	Data Used				
	Often	Sometimes	Never	Totals	Percent of usage
Data from two months before date of issue					
DAILY SOLAR ACTIVITY CENTERS (in map or photographic form)					
Hα Synoptic Chart (Carrington rotation)	109	138	104	351	70%
X-ray (OSO-8)	117	145	104	366	72
Magnetograms					
Mt. Wilson	123	128	108	359	70
Kitt Peak	117	130	116	363	68
Calcium Plages (McMath or Catania)	113	132	117	362	68
Hα Spectroheliograms (Ramey or Boulder)	121	132	117	370	68
Sunspots (Boulder)	142	162	81	385	79
Corona	87	146	123	356	65
2 cm Spectroheliograms (NELC)	68	110	175	353	50
8.6 mm Spectroheliograms (NELC)	66	109	174	349	50
SUDDEN IONOSPHERIC DISTURBANCES					
Table of Events and Number of Events in each Plage Region	132	186	70	388	82
SOLAR RADIO WAVES					
Spectral Observations	95	131	130	356	63
Selected Events by Radioheliograph	78	132	134	344	61
COSMIC RAYS					
Neutron Monitors Daily Values	71	132	167	370	55
Chart of Variations	68	123	159	350	56
GEOMAGNETIC INDICES					
Table of Indices Kp, Cp, Ap, aa (cross out any not used)*	235	98	61	394	85
Chart of Kp by Bartels 27-day Rotation	205	110	68	383	82
12-Month Table of Daily Averages, Ap	185	108	88	381	77
Equatorial Indices Dst	124	120	123	367	66
Principal Magnetic Storms	194	154	47	395	88
Sudden Commencements and Solar Flare Effects	206	150	42	398	89
RADIO PROPAGATION INDICES					
North Atlantic Quality Figures and Forecasts	27	85	229	341	33
Transmission Frequency Ranges - North Atlantic Path	31	80	249	360	31
Quality Indices on Paths to Germany	29	62	252	343	27
PART II (COMPREHENSIVE REPORTS)					
Data from six months before date of issue					
SOLAR FLARES					
Hα Solar Flares	189	118	57	364	84
Flare Indices	157	140	64	361	82
SOLAR RADIO WAVES					
Worldwide Outstanding Occurrences at Fixed Frequencies	125	132	100	257	61
MAGNETOGRAMS OF GEOMAGNETIC STORM	118	138	76	332	77
Data from seven months before date of issue					
ABBREVIATED CALENDAR RECORD	61	131	109	301	64
REGIONAL FLARE INDEX	55	135	121	311	61

*Of total Geomagnetic Indices Users, 23% do not use Cp, 8% do not use Ap, and 28% do not use aa.

AMERICAN REVOLUTION BICENTENNIAL
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